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AN ANALYSIS OF MANAGEMENT CONTROL EFFECTIVENESS AT NAVAL SUPPLY--ETC(U)
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1 OF 2
AD A062206

NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

AN ANALYSIS OF
MANAGEMENT CONTROL EFFECTIVENESS
AT NAVAL SUPPLY SYSTEMS COMMAND
PROCUREMENT ORGANIZATIONS

by

Felton Miller

September 1978

Thesis Advisor: J.M. Shiels

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE	READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. / 3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle): An Analysis of Management Control Effectiveness at Naval Supply Systems Command Procurement Organizations	5. TYPE OF REPORT & PERIOD COVERED: Master's Thesis; September 1978
	6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s): Felton/Miller	8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS: Naval Postgraduate School, Monterey, California 93940	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS: Naval Postgraduate School, Monterey, California 93940	12. REPORT DATE: September 1978
	13. NUMBER OF PAGES: 107
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)	15. SECURITY CLASS. (of this report): Unclassified
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

12) 108 p.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Naval Supply Systems Command Procurement
Management control effectiveness
Navy field procurement
Field procurement organizations

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

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S/N 0102-014-6601

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

(20. ABSTRACT Continued)

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The most critical aspect of this process is the development and implementation of an effective management control system which provides adequate information to all levels of the procurement hierarchy. This paper suggests an approach for designing such a framework.

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An Analysis of Management Control Effectiveness at Naval Supply Systems Command Procurement Organizations

by

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Lieutenant, United States Navy
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Submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
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ACKNOWLEDGEMENTS

The author of this thesis wishes to express his appreciation to those individuals who willingly assisted with the collection of data and the preparation of this research effort.

Particular gratitude is expressed to Commander Leonard Vincent, SC, USN, Director, Procurement Department, Naval Supply Center, Puget Sound, Bremerton, Washington; Lieutenant Commander Ed Chew, SC, USN, Director, Contracts Division, and Mr. Gene Cornish, Deputy Director, Contracts Division, Naval Regional Procurement Office, Long Beach, California; Lieutenant Commander Jim Farkas, SC, USN, Director, Procurement Department, Naval Supply Center, San Diego, California.

The steadfastness of my thesis advisor, Commander John Shiels, SC, USN, and the members of the Naval Postgraduate School Procurement Management faculty provided the proper focus for developing the substance of this study.

Last, but not least, to Mina Veazie whose support and assistance were invaluable during the preparation of this document. She suffered as much as I ...

I. INTRODUCTION

A. BACKGROUND

Navy procurement organizations are currently deluged with a vast number of purchase requests which must be controlled through the lengthy and often complex procurement process. The sheer volume of the purchase actions involved is indicative of the enormous scope of the control problem: in Fiscal Year 1977 there were 2.1 million individual procurement actions accomplished by Naval Supply Systems Command (NAVSUP) field procurement organizations for a total money value of $4 billion (20 percent of the total Navy procurement funds).[1] Additionally, the ever increasing number of urgent "high priority" purchase requests, when combined with routine procurement actions, complicate the management control process. These high priority purchase requests require special procurement techniques and management attention.

The tasks of awarding contracts in a reasonable time period, evaluating procurement personnel, and satisfying information requirements of higher authority, further complicate the procurement management arena. An approach to solving these problems is the utilization of an effective management

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[1] U.S. Department of the Navy, "Survey of Procurement Statistics," Naval Material Command, (Washington, D. C.), September, 1977.

information system (MIS) with adequate planning to support the management control process. Other critical ingredients for effective procurement management control include development of competent procurement managers and implementation of good business management practices in NAVSUP procurement organizations.

In this dynamic environment, the procurement manager needs information from external sources and from each level of the procurement organization to effectively plan, schedule, organize, evaluate and control the whole procurement process. When adequate management control is not achieved, the procurement manager is forced into a "crisis management" posture. He is so busy taking emergency actions that there is no time to exercise good judgement and employ effective management skills to manage the procurement process. Planning falls by the wayside, exacerbating the management control problem, and a vicious cycle occurs.

A key element of a viable management control system is the creation of an atmosphere which is conducive to exercising sound judgement and utilizing fundamental business concepts. This is generally accomplished with viable procurement training and career development programs, better information for decision-making, and implementation of innovative management techniques.

A previous study of procurement management information systems identified a number of abstruse and penetrating

problems in the management of the Navy procurement process.[2] The primary research question of this study was "What are the management information requirements to effectively control and appraise the U. S. Navy's procurement organization and operation?"[3] This study explored the problems encountered in obtaining adequate management information and assessing the role of automatic data processing (ADP) in procurement management. Furthermore, the study described the current procurement organization as "an autonomous unit operating independently in its design and implementation of procurement information systems."

This research effort is designed as a follow-on to the earlier study described above. It investigated existing procurement management information systems being used by Navy procurement organizations to control and monitor the pre-solicitation and solicitation-award functions. This study of the Navy procurement management process focuses on the utilization of fundamental management concepts to formulate an effective procurement management control framework for Navy field procurement organizations.

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[2]Kenneth L. Patterson, Lieutenant, U. S. Navy, "An Information System for the Management of Navy Procurement." Unpublished Masters Thesis. George Washington University, 1971, p. 2.

[3]Ibid, p. 8.

B. PROBLEM STATEMENT

The Report of the Commission on Government Procurement concluded that:[4]

> Operating personnel must be given the authority and management support necessary to apply total economic cost principles in decision-making. This requires that top level agency managers support and follow through with the effective programs to achieve this capability. These programs include on-the-job training, encouragement of innovative techniques, improved coordination among staff and organizational elements, better information for decision-making ...
>
> ...Top management needs better reporting systems and improved statistical data to make decisions required to implement the recommendations on the acquisition of commercial products. They offer the potential for greater user satisfaction and substantial savings. The key to achieving this potential is enlightened, aggressive management.

There is a need for implementing Federal procurement policy in a realistic manner which will provide for effective management control of the Navy procurement process from the Secretary of the Navy down to the Navy field procurement organizations.

NAVSUP's procurement management mission is:[5]

> ...to provide administrative and technical support and guidance to the Navy Field Procurement System (NFPS). This support and guidance includes policy direction, technical assistance, performance appraisal, procurement planning, and functional management of field procurement operations worldwide.

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[4]Report of the Commission on Government Procurement, Volume 3, Part D, p. 79, dated December, 1972.

[5]J. P. Davidson, Commander, Supply Corps, United States Navy, "NAVSUP's Procurement Management", Navy Supply Corps Newsletter, (June, 1977), pp. 9-11.

Therefore, NAVSUP needs standardized reporting of appropriate information from Navy field procurement organizations to perform its procurement management function.

This paper addresses the managerial control function at selected Navy field procurement organizations with an objective of improving their effectiveness (including information reporting proficiency).

C. THESIS OBJECTIVE

The planning and control functions for the procurement process encompasses an enormous spectrum. Resource and time constraints dictate a research effort of limited scope. Accordingly, the author intends to evaluate the effectiveness of the procurement management control procedures at representative NAVSUP procurement organizations.

The three major types of NAVSUP procurement organizations are Inventory Control Points (ICP), Naval Supply Centers (NSC), and Naval Regional Procurement Offices (NRPO).

ICP's centrally manage Navy wholesale material (spare parts and system components for subsequent issue to Navy customers). They perform centralized buying of commodities for stock requirements and system stock replenishment.[6]

NSC's and NRPO's provide procurement support for naval activities and fleet units in their geographic areas. These

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[6]U. S. Department of the Navy, Field Purchasing, NAVSUP Publication 467, (Washington, D. C.: Government Printing Office, 1977), p. I-6.

purchasing actions range from simple small purchase buys to multimillion dollar research and development contracts for activities like the Naval Weapons Center, China Lake, California.

NAVSUP exercises its management functions through the four NRPO's (Philadelphia, Pennsylvania; Washington, D. C.; Long Beach, California; Naples, Italy) and four of the six NSC's (Norfolk, Virginia; Charleston, South Carolina; Oakland, California; Pearl Harbor, Hawaii) to perform regional functions.[7]

Both NSCs and NRPOs perform additional duties as directed by NAVSUP such as procuring wholesale materials for ICPs or making one time system procurements.

The author intends to evaluate the effectiveness of the management control systems at NSC Puget Sound, Bremerton, Washington; NSC San Diego, California; and NRPO Long Beach, California. These three NAVSUP field procurement organizations were selected for evaluation because they are representative of NSCs and NRPOs. Additionally, they are easily accessible to the author and support a wide spectrum of Navy customer procurement needs. After procurement management control system effectiveness deficiencies are identified at their activities, a procurement management control model,

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[7]Ibid.

which emphasizes fundamental business management concepts, will be proposed to alleviate the effectiveness deficiencies.

D. METHODOLOGY

1. Interviews

Since most directives and procedures are subject to interpretation by the personnel who implement the expressed and implied Federal procurement policy, personal interviews were conducted with key individuals at the procurement organizations evaluated in this study.

2. Government Directives and Documents

To ascertain whether Federal procurement policy is being implemented in accordance with appropriate regulations, a review of pertinent directives which govern the Navy procurement process was conducted.

3. Current Literature

Since the benefits of planning and control practices and procedures in the private sector may be relevant to the Navy environment, available books, journals, magazine articles, and technical reports were also evaluated for applicability.

E. OUTLINE PRESENTATION

This thesis develops a model for effective management control at selected NAVSUP field procurement organizations. The model is based upon empirical research and evaluation of the deficiencies in the three control systems used at NSC Puget Sound, NSC San Diego and NRPO Long Beach. Then a

methodology for minimizing the deficiencies of these control systems is proposed.

Chapter II describes the planning activities required to implement an effective procurement management control system. Chapter III is an analysis of the essential elements of a control system and their relationship to the planning process. Chapter IV evaluates the effectiveness of the present management control systems in use at NSC Puget Sound, NSC San Diego and NRPO Long Beach.

Chapter V is a proposed model for management control at NAVSUP field procurement organizations. The model emphasizes the use of basic business concepts. Finally, Chapter VI concludes the study with the recommendations of this thesis.

II. PLANNING FOR MANAGEMENT CONTROL

A. INTRODUCTION

Planning is a "system of decisions" carried out in a climate of often conflicting internal and external influences. The internal influences arise within the procurement organization, including organizational behavior, communications, competence of personnel, and resource constraints. External influences are frequently uncontrollable and difficult to anticipate. They include the national political and economic outlook, direction from higher authority (Federal/Department of Defense policies), and the nature of the purchasing interactions.

McFarland describes the climate in which planning is undertaken as one of change:[8]

> Changes press the organization from forces outside as well as inside. Economic, social, political, and technological trends must be noted and their influences incorporated into policy and practice ... Planning is a pervasive and continuous process of anticipating, influencing, controlling, and analyzing of present conditions to make decisions for the future.

There is general agreement that a "vertical dimension" of planning exists: that is, there are hierarchical levels of planning.[9] Anthony recognizes strategic and tactical

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[8] D. E. McFarland, Management: Principles and Practices (McMillan Publishing Co., 1974), p. 314.

[9] David I. Cleland and William R. King, Systems Analysis and Project Management, 2nd ed. (McGraw-Hill, 1975), p. 31; George A. Steiner, ed., Managerial Long-Range Planning (McGraw-Hill, 1963), p. 10.

planning as the logical dichotomy of the planning process. Anthony defines strategic planning as that "process of deciding on objectives of the organization, on changes in the objectives, on the resources used to attain these objectives, and on the policies that are to govern the acquisition, use, and disposition of the resources."[10] In his definition, objectives are that which the organization wishes to accomplish (equivalent to the military mission) and policies are the guidelines to be used to choose the most appropriate course of action for achieving the objectives. In contrast, tactical planning is "the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives."[11]

Ackoff shows the distinction between strategic and tactical planning in terms of three dimensions; time, scope, and direction.[12]

In the time dimension, strategic plans are those that have enduring effects and are difficult to reverse. Strategic planning is long range, while tactical planning is short

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[10] R. N. Anthony, Planning and Control Systems: A Framework for Analysis (Harvard College, 1965), p. 24.

[11] Ibid.

[12] R. L. Ackoff, A Concept of Corporate Planning (Wiley-Interscience, 1970), pp. 4-5.

range. "Long" and "short" being relative terms, thus "strategic" and "tactical" must be relative also. As an example, next week's production planning is more tactical and less strategic than planning a new production facility. In general, strategic planning is concerned with the longest period feasible to consider, while tactical planning is concerned with the shortest period worth considering. Both types of planning are necessary; they are complementary.

In terms of scope, the more facets of an organization's activities that are affected by a plan, the more strategic the plan is. That is, strategic planning is relatively broad in scope, while tactical planning is narrower in scope. A tactical plan for a department may be a strategic plan from the point of view taken by a division of the department.

In terms of direction, tactical planning is concerned with selecting means to pursue specified goals. The goals are normally supplied by a higher level in the organization. Strategic planning is concerned with both the formulation of goals and selection of the means by which they are to be attained.

It should be clear now that strategic planning deals more with uncertainty and external variables, while tactical planning deals with relative certainty and is influenced more by internal considerations. Figure 1 is an illustration of the relative position of strategic and tactical planning. Note that while the procurement manager concentrates on

RELATIVE POSITION OF STRATEGIC AND TACTICAL PLANNING

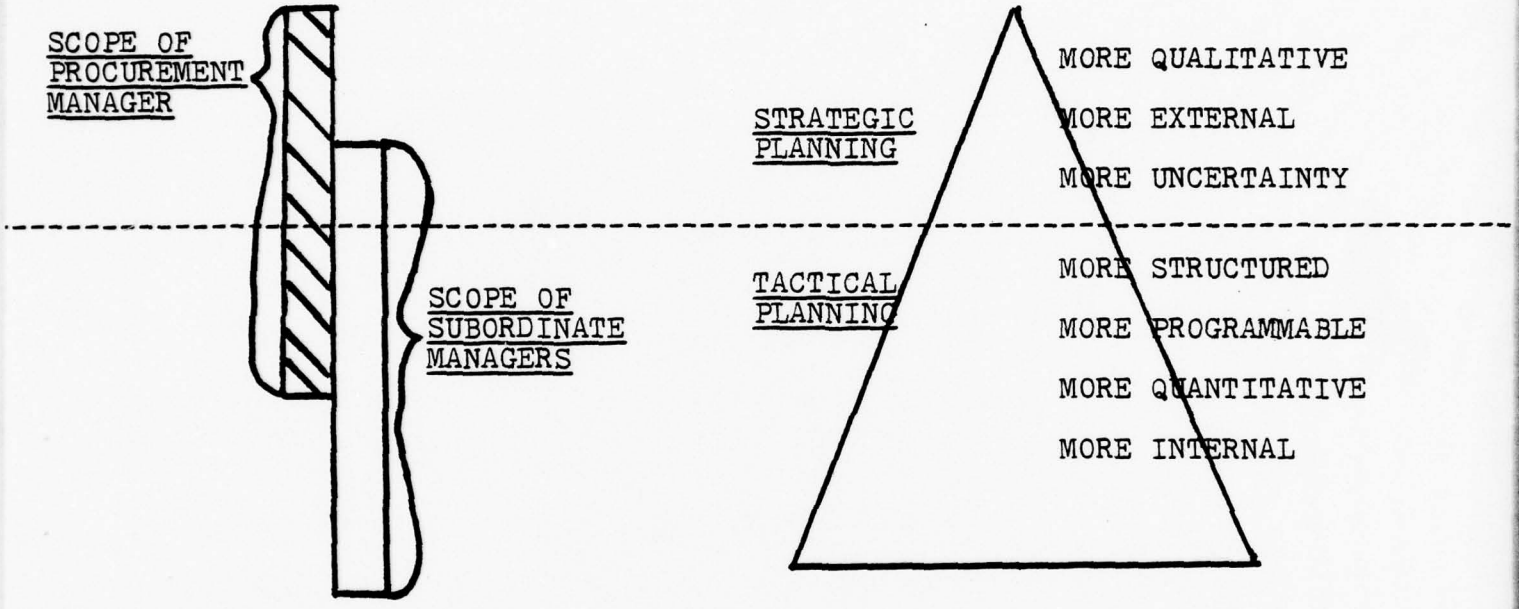

Figure 1

strategic planning, he must also be actively involved in tactical planning. Likewise, the subordinate managers cannot concentrate solely on tactical planning.

B. STRATEGIC PLANNING

Strategic planning is most often considered from the systems analysis point of view, which requires that the total system (set of all interacting entities) be examined to determine the controllable and uncontrollable variables, to define the relationships between the inputs and outputs, and the desired objectives to be accomplished.[13] Additionally, it is necessary that the strategic planner examine the systems aspect of his organization; he must recognize the various stakeholders and their conflicting individual goals and relate these goals to alternative courses of action.[14] In suggesting an effective method for strategic planning in complex systems, Cleland and King identify six primary elements of such planning:[15]

1. A planni·
2. A system of plans
3. A decision process
4. A management information system

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[13] S. B. Richmond, Operations Research for Management Decision (Roland Press, 1968), p. 34.

[14] Cleland and King, pp. 19-20.

[15] Ibid, p. 40.

5. Contingency planning

6. An organizational culture for planning

1. A Planning Process

A systematic process similar to those suggested by Emery[16] and Archibald[17] should be applied at every level of planning, strategic or tactical. Some of the basic steps, as they apply to strategic planning, are discussed in this section.

Systematic strategic planning begins by explicitly stating the purpose and goals of the organization (the military mission for procurement organizations), and then determining specific measurable objectives that if accomplished will propel the organization closer to the attainment of its broad goals. The strategic planner refines direction from higher authority into measurable objectives which can be used to guide the formulation of strategies and alternative courses of action to achieve the approved objectives. As these alternatives are evaluated it becomes necessary to establish priorities among the specific objectives to conduct effective tradeoffs.

For each strategy considered it is desirable to identify just what must be done to obtain the planned results.

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[16]David A. Emery, The Compleat Manager (McGraw-Hill, 1970), p. 108.

[17]Russell D. Archibald, Managing High-Technology Programs and Projects (John Wiley & Sons, 1976), p. 141.

For the strategy chosen, the planning process requires assignment of resources to the tasks identified, scheduling of the activities, and monitoring the progress of task completion against the schedule of objectives and milestones. While the details of these steps are of most concern in tactical planning, the distinction between levels of planning is not sharply defined. Certainly strategic plans should identify intermediate objectives or milestones in the schedule of activities.

2. A System of Plans

A system of plans is the written result of the planning process. The plans correspond to the levels of planning; that is, there are strategic plans and tactical plans. The plans should explicitly define the objectives established, the approach to be taken, and the commitments assumed – explicit recognition of assumptions made about the external environment, organizational resources and evaluation of perceived risks and areas of uncertainty.

A system of plans is the "master plan" which includes the objectives (strategic plans) and the means for accomplishing the objectives (tactical plants). In NAVSUP field procurement organizations an objective might be to reduce by ten percent the amount of time required to process purchase requests and make the contract award. The means for attaining the objective might be to hire additional personnel or increase productivity by automating selected routine functions (assuming resources are available).

3. A Decision Process

The planning process results in the written output of plans which represent choices made from alternative courses of action. Sound strategic planning requires a systematic decision-making process. Systems analysis is such a process; it involves a careful analysis on the basis of costs and benefits of the alternative strategies identified in the planning process, and it specifically recognizes the uncertainty of the environment.[18] Systems analysis is erroneously considered by many managers to be a process designed to replace managerial judgement with quantification and mathematical models. The emphasis of systems analysis is on a systematic method of explicitly identifying the assumptions being made about the organization and the environment, the alternatives being considered to accomplish desired objectives, and an analysis of how the validity of the assumptions affect the decisions made. Quantitative methods are often used to assist the decision-making process where they have been shown to be generally applicable, but they augment rather than supplant sound judgement.[19]

A tool of systems analysis which is used to augment human judgement is the outcome array of the type presented

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[18] Cleland and King, p. 55.

[19] Ibid, pp. 64-70.

in Figure 2. The rows are labeled A_1 through A_n to indicate the courses of action that may be selected; the columns are labeled S_1 through S_m to indicate the possible states of nature that may prevail after the decision is made. The table entries O_{ij} are the predictions of the outcome that will result when the ith alternative is selected and the jth state of nature prevails. Decisions made with the

	S_1	S_2	...	S_m
A_1	O_{11}	O_{12}	...	O_{1m}
A_2	O_{21}	O_{22}	...	O_{2m}
.	.	.		.
.	.	.		.
.	.	.		.
A_n	O_{n1}	O_{n2}	...	O_{nm}

Outcome Array

Figure 2

assistance of an outcome array fall into three categories; assumed certainty, risk and uncertainty. Some of the criteria which may be applied to reach decisions in each category are explained below.[20]

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[20]G. E. Whitehouse and B. R. Wechsler, Applied Operations Research (John Wiley & Sons, 1976), pp. 24-43.

When it is assumed that the resulting state of nature is known in advance, the outcome array has only one column and the decision category is "assumed certainty". Obviously, the decision criteria is to select the most favorable outcome.

Decisions under "risk" are those categorized by having determined through experience or judgement the probabilities of the various states of nature. Depending on the judgement and personal style of the decision-maker, varying criteria may be used to select the most desirable alternative. The decision-maker may choose the alternative with the highest expected return (i.e., the sum of the products of the outcomes in each row and their respective probabilities); or he may assume that the most probable future state of nature is going to occur and proceed as under assumed certainty. Finally, he may select the alternative which maximizes the probability of attaining at least some aspired level of outcome or minimizes the probability of loss.

When no probabilities can be determined for the future states of nature, the decision-maker is faced with a decision under total "uncertainty". and again he may choose one of several criteria as a decision rule. Applying the "Principle of Rationality" (the name is not meant to imply that this is the best criteria), the planner assumes that all outcomes are equally likely and proceeds to choose an alternative under the risk rules. The optimistic planner

might make a "maximax" choice where the alternative with the best possible outcome is more favorable than the best outcome of all other alternatives.

Most procurement management decisions at NAVSUP field organizations are in the assumed certainty or risk categories since the states of nature (market conditions) are known or can be inferred from past experience or available information. It is important to remember that systems analysis techniques aid the decision-maker. The decision-maker is still the one who must decide on the appropriate course of action.

4. A Management Information System (MIS)

A critical element of strategic (and tactical) planning is the design of a MIS to satisfy information and communication needs in support of the planning and management processes.

Davis defines a MIS as:[21]

> An integrated man/machine system for providing information to support the operations, management, and decision-making functions in an organization. The system utilizes computer hardware and software, manual procedures, management and decision models, and a data base.

The primary value of a MIS is its capacity to support the decision-making process with accurate, timely, and relevant information. Cleland and King state that:[22]

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[21]Gordon B. Davis, Management Information Systems: Conceptual Foundations, Structures, and Development (McGraw-Hill, 1974), p. 5.

[22]Cleland and King, p. 149.

> MIS should allow for the collection of information for unique decisions which are the province of strategic systems planning. At the other extreme a modern MIS should include a capability for automated decision-making on routine decisions.

The information and communication subsystem of an organization consists of a "formal, structured system and an informal, or unstructured system."[23]

The formal system generally conforms to the organizational structure and is available to anyone authorized access within the organization, while the informal system is a private "grapevine" known only to those who use it. This informal system consists of telephone calls, informal discussions, and informal records.

While the MIS to be used in the procurement management process will interface primarily with the formal information system, "it is important to recognize the opportunity for an improvement in information availability through bringing into the formal system some of the data being provided outside it."[24]

The increasing volume and availability of information needed for decision-making emphasize the need for managers to receive relevant and accurate information in time for them to make meaningful decisions. The cost of acquiring additional information must be weighed against the value of the information desired.

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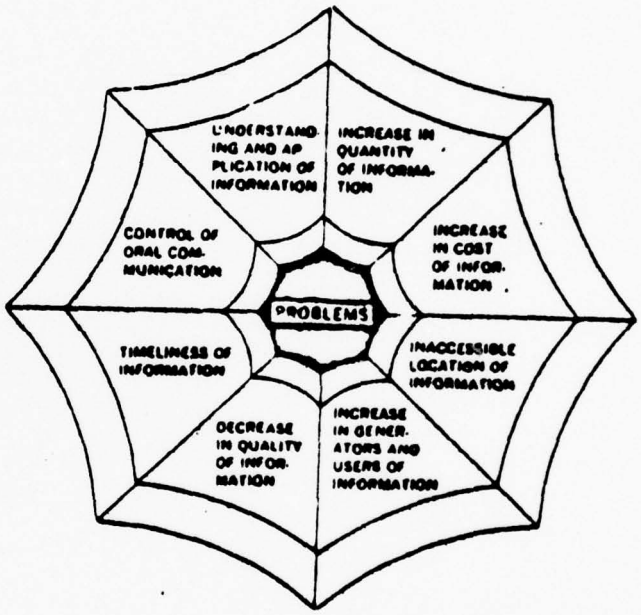
[23]Davis, p. 199.

[24]Ibid, p. 200.

Meltzer puts the information/communication situation in perspective by saying that knowledge (that which the manager must have to operate) is a function of information and communication. The solution to this function is an eight part problem as depicted in Figure 3. Constant "review, reevaluation and reestablishment" of our information system is required to keep knowledge attainable.[25]



Information-Communication Problem

Figure 3

5. Contingency Planning

This discussion of the palnning process has been based on the assumption that management can forecast with considerable accuracy. However, there are independent

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[25]Morton F. Meltzer, The Information Imperative (American Management Association, 1971), p. 7.

variables which are outside management's control, i.e., uncertain, such that anticipated planning results do not always materialize. Planning must be responsive to changes in external, as well as internal factors to allow for environmental uncertainties. Adaptability, resourcefulness and ingenuity are needed in the planning process.

The most elaborate way to plan for uncertain events is to prepare contingency programs. But the effort and expense of preparing such a program are expensive, and it is easier to postpone the planning until a crisis arises (crisis management).

Newman and Warren point out a viable method of planning for contingencies. "The prudent manager, however, should identify those contingencies whose risks are so large that special programs are justified, and he should ensure that sequential adjustments ... are promptly made."[26]

One such contingency which should have a special program (procedure) is the handling and expediting of "urgent" high priority purchase requests. The negative ramifications of dealing with this situation in a "crisis management" mode is so severe that a special program is warranted.

6. An Organizational Culture for Planning

Emery points out that planning must incorporate "meaningful participation" at all levels of the organization

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[26]W. H. Newman and E. K. Warren, The Process of Management: Concepts, Behavior, Practice, 4th ed. (Prentice-Hall, 1977), p. 408.

to be effective.[27] To encourage this participation, receptiveness to change and innovative ideas must be communicated within the organization.[28]

The successful organization will stress awareness of these salient characteristics of an effective strategic planning process:[29]

1. Planning is today's anticipation of what is most likely to occur and not the prediction of future events. This implies the identity and ranking of alternatives.

2. The main purpose of planning is to help make the best possible decisions about what to do now, and not the determination of future actions.

3. Anticipations and assumptions about the future should be made explicit and should be subjected to analysis.

4. Planning must be continuous; the manager must determine the appropriate planning cycle.

5. Planning is a dynamic process in which projections help guide actions whose results provide feedback to the projection process.

Frequently scheduling is substituted for sound planning. Martino emphasizes the distinction: "Planning and scheduling are separate functions. A plan is a model of a

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[27]Emery, p. 104.

[28]Cleland and King, p. 47.

[29]Emery, pp. 106-8.

job to be done. It represents an ideal approach. The schedule represents an approach which is specified for a particular situation."[30]

The distinction between planning and scheduling is more difficult to determine when tactical planning is considered. Examination of tactical planning in the procurement management environment will be discussed next.

C. TACTICAL PLANNING

1. Approaches to Tactical Planning

Probably the best known of all planning techniques is the Gantt chart, or bar chart, developed by a pioneer of scientific management, Henry L. Gantt. The Gantt chart (Figure 4) shows a plan for action and how well progress is following the plan. Vertical lines forming columns provide divisions of space which represent both equal divisions of time and the amount of work to be done in that time. The columns are headed with dates, and a description of scheduled activities is entered in an index column on the left side. Scheduled times for activities are indicated by light horizontal lines between scheduled start/stop dates. Actual progress is indicated by heavy horizontal lines or bars (thus the alternate name); the bars provide a quick graphic indication of how work completed compares with the schedule.[31]

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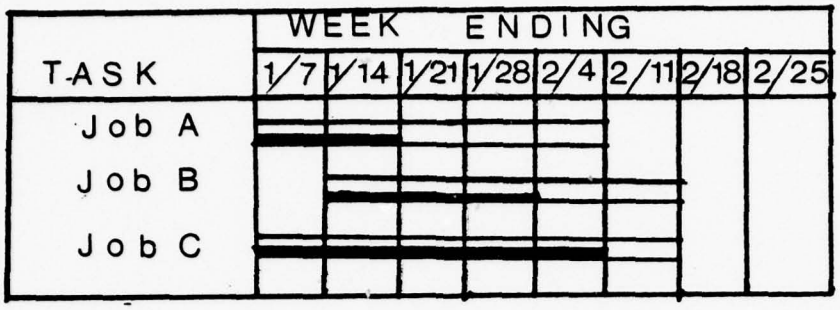
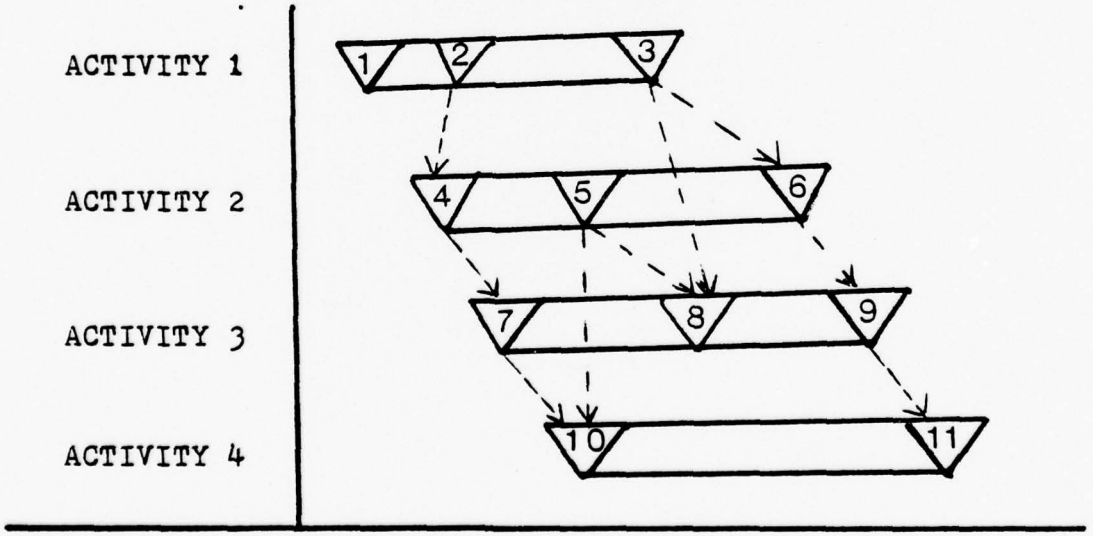
[30] R. L. Martino, Project Management (MDI Publications, 1968), p. 79.

[31] Peter J. Burman, Precedence Networks for Project Planning and Control (McGraw-Hill, 1972), p. 3.



GANTT CHART

Figure 4



MILESTONE CHART SHOWING INTERDEPENDENCIES

Figure 5

The milestone method (Figure 5) is a refinement of the bar chart. The "milestones" are shown within the bars and represent definable points in time or accomplishment. This method was the first attempt to indicate precise dependency between activities on a bar chart; interdependencies between milestones of different bars are shown by dashed arrows between milestones.

The relatively simple traditional approaches to planning for control discussed above all have limitations. All use time as a basis against which the plan is drawn, and are only applicable when reasonably accurate time estimates can be made. Additionally, bar charts have no capability for controlling distribution of resources or expenditures and are best suited for project management.

Networks and network analyses are important techniques for control of complex systems. Two activity networks, CPM (Critical Path Method) and PERT (Program Evaluation and Review Technique), provide a means of (1) communication to discuss the operational system in terms of its significant features, (2) specifying the data requirements for analysis of the system, and (3) starting the analysis from a specific point for analysis and scheduling of the operational systems.[32]

2. Planning for Implementation

As stated previously, tactical planning is the process by which managers assure that resources are obtained and used

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[32]Whitehouse and Wechsler, p. 223.

effectively and efficiently in the accomplishment of the organization's objectives. Tactical planning is the implementing process for achieving the objectives delinated in the strategic planning process.

The tactical planning process determines which specific control procedures will be used to maintain effective management control in the organization. Thus, tactical planning includes concrete steps and provisions for controlling the implementation of the courses of action chosen to accomplish organizational objectives.

3. Organizational Structure Planning

The structure of an organization establishes the authority and responsibility relationships among its personnel. "The underlying purpose of organization is, logically, to facilitate cooperation among the firm's variously skilled personnel and to channel their efforts toward a common goal."[33] England recognized that effective performance in procurement organizations is enhanced by the proper organizational structure.[34]

In addition, the Commission on Government Procurement had its view of how procurement organizations should be structured:[35]

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[33]Lee, Lamar, Jr., and Donald W. Dobler, Purchasing and Materials Management: Text and Cases (McGraw-Hill, 1977), p. 434.

[34]Wilbur B. England, The Purchasing System (Richard D. Irwin, Inc., 1967), p. 133.

[35]Report of the Commission on Government Procurement, Volume 3, Part D, p. 18.

> The organizational structure of many activities makes timely decisions difficult and, therefore, costly and unsatisfactory. To make a system responsive to user needs, decision-making authority must be delegated to the lowest feasible level.
>
> ... Systems that subordinate the user's needs to overly rigid requirements have few satisfied customers.

Stieglitz defines organizational planning as "the process of grouping activities, delineating authority and responsibility, and establishing working relationships that will enable both the company and the employee to realize mutual objectives."[36] Stieglitz emphasizes three principles of organization as the planner's tools; (1) span of control, (2) homogeneous grouping of activities, (3) decentralization.

a. Span of Control

The span of control principle is: "There is a limit to the number of positions that can be effectively supervised by a single individual."[37] A number of factors affect the span of control:

(1) The competence of the superior and the subordinates;

(2) The extent to which the supervisor must carry out nonmanagerial responsibilities and the demands on his time from other people and units;

(3) The similarity or dissimilarity of the activities being supervised;

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[36]Harold Lazarus and E. Kirby Warren, ed., The Progress of Management: Process, Behavior, and Operations Research, (Prentice-Hall, 1968), p. 67; Harold Stieglitz, Organizational Planning, (National Industrial Conference Board, Inc., 1962).

[37]Ibid, p. 71.

(4) The incidence of new problems in his unit;

(5) The degree of physical dispersion;

(6) The amount of automation or computerization.

If there is a need for close supervision and control, the span of control should be small. The supervisory costs are higher and there are more levels in the organizational structure. This type of situation can cause increased communication problems. But, if a small number of supervisors are used, the span of control increases. This forces the supervisor to look at a broad range of activities and become a generalist rather than specializing in a specific area.

The complexity of the tasks involved and the quality of supervision required should be evaluated to determine the appropriate span of control for a specific operation.[38]

b. Homogeneous Grouping of Activities

This principle calls for grouping functions in organizational units based on homogeneity of objectives to achieve the most efficient and economical operations.[39]

The three primary methods of grouping functions are:

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[38]Lee and Dobler, p. 436.

[39]Stieglitz, p. 71.

(1) Functional, where activities are grouped on the basis of similarity of function alone.

(2) Regional, where all activities which occur in a region are grouped under one head.

(3) Product, where all production, sales, or other activities incident to a given product are grouped under one head.

Procurement operations permit efficient use of the functional concept.[40] Lee and Dobler divide the procurement operation into five functional classifications.[41]

(1) Administrative. Purchasing administration involves all the tasks associated with the management process, with emphasis on the development of policies, procedures, controls, and mechanics for coordinating purchasing operations with other departments.

(2) Buying. This includes a wide variety of activities such as reviewing requisitions, analyzing specifications, doing informal value analysis, investigating vendors, interviewing salespeople, studying costs and prices, and negotiating.

(3) Expediting. This order follow-up activity involves various types of vendor liaison work, such as reviewing the status of orders, writing letters, telephoning vendors, and occasionally visiting vendors' plants.

(4) Special staff work. Any well-developed purchasing operation has an unending number of special projects or studies requiring specialized knowledge and uninterrupted effort. Such projects are commonly found in the areas of formal value analysis, economic and market studies, special cost studies, special vendor investigations, and system studies.

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[40] Lee and Dobler, p. 440.

[41] Ibid.

(5) Clerical. Every department must write orders, maintain working files, maintain catalog and library materials, and maintain records for commodities, vendors, prices, and so on.

The procurement manager must also satisfy NAVSUP civilian labor hours and cost charging requirements under the present Resource Management System (RMS). RMS is a financial management information system for reporting Department of Defense (DOD) military and civilian personnel labor costs. The civilian labor hours are charged against the cost accounts listed in Table 2-1.[42] A description of each cost account is provided in Appendix A.

c. Decentralization

This principle involves the authority to take or initiate action. Ideally, this authority should be delegated as close to the scene of action as possible.[43] Stieglitz isolates three critical criteria to use for making the delegation decision:[44]

(1) Competence to make decisions on the part of the person to whom authority is delegated; confidence in that competence on the part of the superior is also an essential element.

(2) Information ... Decision-making authority cannot be pushed below the point at which information bearing on the decision is available. (The MIS must support all levels of decision-making activity.)

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[42]U. S. Department of the Navy, NAVSUP Management Handbook, Publication 285, (Washington, D. C.: Government Printing Office, 1972), Chapter 5.

[43]Stieglitz, p. 72.

[44]Ibid.

Table 2-1

NAVSUP COST ACCOUNTS

Title	Number
Procurement Operations	2700
Procurement Operations	2720
Purchase Document Control	2721M
Large Purchase Buying Operations	2722M
Large Purchase Solicitation & Contract Production	2723M
Large Purchase Modification & Document Production	2724M
Small Purchase Buying Operations	2726M
Small Purchase Solicitation & Order Production	2727M
Small Purchase Modification & Document Production	2728M
Office Management and Administration	2729U
Procurement Overall Management	2790
Procurement Management	2791U
Field Management	2792U
Contract Administration	2800
Contract Administration	2820
Large Purchase Contract Administration	2821M
Small Purchase Administration	2822M
Contract Administration Management	2890U

(3) Scope of impact of the decision. Decisions made by one unit head may affect only the men, money, or material within his own sphere of accountability. Thus, authority may be decentralized to the level where the impact of the decision is local. Certain decisions having companywide effect, for example, corporate objectives, policies, budgets, are usually not decentralized at all.

The limits on decentralization must keep the organization from going too far and ending up in complete fragmentation. Some part of the decision-making process must remain at the central level. Therefore, the decentralization process becomes a matter of degree.

III. THE MANAGEMENT CONTROL PROCESS

A. INTRODUCTION

Management control is defined as "a systematic effort to set performance standards consistent with planning objectives, to design information feedback systems, to compare actual performance with those predetermined standards, to determine whether there are any deviations and to measure their significance, and to take any action required to assure that all corporate resources are being used in the most effective and efficient way possible in achieving corporate objectives."[45]

There is general agreement that the setting of clear and realistic standards is essential to exercise of effective control. Mockler observed that inaccurate standards are found to be the cause of deviations almost as often as operating deficiencies.[46]

Considerable skill is needed to take corrective action in a manner which does not stifle initiative and creativity within the procurement organization. If the emphasis is always on finding errors and telling people that they have made mistakes, their confidence in the control system may

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[45]Robert J. Mockler, The Management Control Process, (Appleton-Century-Crofts, 1972), p. 2.

[46]Ibid, p. 3.

deteriorate and shift the emphasis to avoiding erroneous actions rather than doing things right.

Since there is more to management control than measuring, comparing, and taking corrective action, Mockler suggests examining favorable, as well as unfavorable variances during control reviews. The following action steps are important and essential in maintaining effective management control:[47]

1. Creating and communicating effective standards
2. Developing information reporting systems
3. Determining the significance of deviations from standards
4. Taking positive action to improve operations.

In exercising control, effective managers are concerned with more than obtaining compliance with performance standards. Managers should also look for constructive ways to improve the use of organizational resources.

Management control is the logical extension of the procurement organization's planning process, since a good plan will include a means for controlling performance. Hence, a procurement management control system cannot be developed or exercised effectively unless there are specific objectives and an overall system of plans for reaching these objectives. Since control standards are, in essence, qualifications of plans, planning and control functions are exercised simultaneously to establish performance standards.

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[47] Ibid, p. 4.

While management control is always exercised within the overall system of plans, the planning and control functions are distinct. The planning process leads to development of control tools and systems for performance evaluation and direction within the framework of the organizational objectives. The management control process is the implementation of a specific control system (tools and procedures) to realize the organizational objectives.

Additionally, effective control depends on knowing how to manage human resources effectively, that is, selecting competent personnel, introducing organizational changes when required, motivating better performance, maintaining adequate training and career development programs, and fostering an atmosphere conducive to exercising sound judgement.

B. CREATING AND COMMUNICATING EFFECTIVE STANDARDS

Once the objectives and scope of the procurement control effort have been determined by the planning process, the procurement manager must decide on the specific ways in which the control process should be used in the organization. The first step is development of performance standards which are attainable, understandable, reasonable and consistent with organizational objectives.

The kind of standards needed to meet the requirements of the situation must be defined. The standards are the criteria against which performance is measured. Whenever possible, standards should be built into the information system

used for management control and become a part of the control reporting framework. The purpose of standards is to point out places where performance is not conforming to plans. The sooner these deviations are detected, the faster corrective action can be taken.

Standards provide a common frame of reference for understanding and evaluating performance. Although quantitative measures are preferred, standards do not always need to be objective, since performance criteria like ingenuity and creativity are highly judgemental – but must be able to be measured against a standard for management control.

In developing standards, it is important to identify those areas critical to successful operations. Stokes recommends pinpointing the key indicators of performance within the critical areas.[48] Therefore, performance standards are not formulated for every aspect of the procurement organization, but only in those areas critical to success.

Procurement research plays an important role in developing performance standards. This effort must be conducted from a total procurement process viewpoint to insure optimum results. The systems approach is used to prevent fragmented implementation of procurement management control procedures.

Procurement research enlightens procurement decision-making by reducing the number of unknown factors.[49]

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[48]Paul M. Stokes, A Total Systems Approach to Management Control, (American Management Association, Inc., 1968), p. 149.

[49]Lee and Dobler, p. 387.

Additionally, procurement research determines the significance of the procurement function in long-term organizational plans. The analysis of procurement policies, procedures, reports, organizational structure, job descriptions, and other staff studies assist the procurement manager in developing an effective procurement planning and control system.[50]

For NAVSUP field procurement organizations, two critical areas may be buying proficiency and procurement efficiency. Buying proficiency refers to the factors which affect the effective operation of the procurement process (percentage of overdue orders, reasonableness of prices paid for materials and services, source reliability, vendor relations, interdepartmental coordination, quality of the procurement services provided, etc.).

Procurement efficiency refers to evaluation of workloads, organizational resource utilization, operating costs, and processing times as they relate to specific procurement operations.

The procurement manager should make efficient use of the procurement organization's resources while striving for a high degree of buying proficiency.

C. DEVELOPING INFORMATION REPORTING SYSTEMS

Stokes identifies four ways in which control systems can assist management: informing, helping to predict

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[50]Ibid, p. 389.

events, helping to diagnose problems, and reinforcing memory.[51]

A good control system provides information such as trends from which predictions can be made and identifies possible problem areas. Critical control feedback information should be easily accessible to eliminate the need for managers to memorize volumes of information. Stokes concludes that "the successful executive uses control information as an aid to maximizing utilization of his experience and background. He constantly updates his information and reshapes the course of his business by cumulatively improving his basic judgement."[52]

The procurement organization's information system should provide the information flow needed in the management control process, which includes the reporting requirements of NAVSUP. Figure 6 illustrates the information flow through the performance and measurement phases of the management control process and shows how information must be collected and communicated to allow comparison of the results with standards.[53]

Most control reports are based on information stored and processed by the organization's data processing system.

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[51]Stokes, p. 26.

[52]Ibid, p. 29.

[53]Mockler, p. 195.

THE CONTROL PROCESS

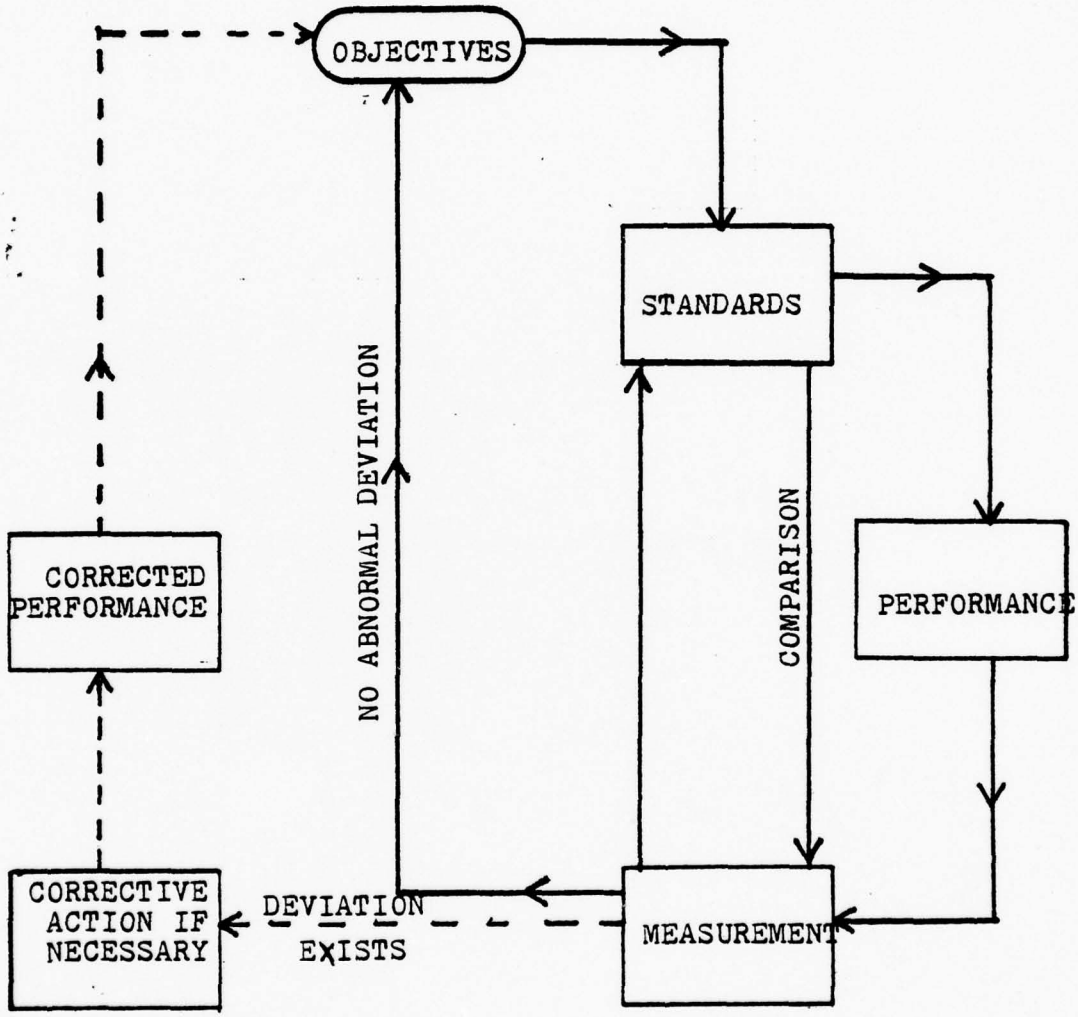

Figure 6

Source: Robert J. Mockler, The Management Control Process, (Appleton-Century-Crofts, 1972), p. 195.

The data processing system required for information collection and dissemination in the major NAVSUP field procurement organizations is extensive. The dynamic environment and the complex nature of the procurement process demand an integrated management information system (MIS). The orderly collection, storage and dissemination of information needed to exercise control is one of the major functions of a MIS.

The MIS should provide for automating routine operations and relieving operating personnel from repetitive clerical functions such as printing of solicitation and contractual documentation, file updating, and document distribution. The MIS should also support the planning process described in Chapter II.

Information retrieval is another important function of the MIS. The needed information should be accessible in a timely manner without wading through volumes of data.

Mockler believes that "the systems approach underlies the development of all effective information processing used in management control."[54] Accordingly, it is necessary to understand the impact of the systems approach on the procurement organization.

The systems approach forces managers to look at the organization as an information network that links the decision-makers at all levels with the information needed

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[54]Ibid, p. 473.

to make all types of decisions. This approach focuses on the dynamic interaction and intercommunication among components of the system. In addition, this approach provides the flexibility and adaptability required in complex organizational environments.

D. DETERMINING THE SIGNIFICANCE OF DEVIATIONS

This step is also called evaluating performance, and cannot be performed effectively if the earlier stages of the management control process have not been executed properly. The true causes of deviations may require considerable investigation: the standards may have been inappropriate, the information may have been inaccurate, or a misunderstanding may have occurred. Concersely, there may be an operational problem which requires a change in operating procedures. An effective management control system permits the manager to manage by exception – concentrating primarily on those situations requiring corrective or commendatory action.[55] Hence, it is important to track down the cause of problems which are signaled by negative deviations from the performance standard. However, positive deviations may present opportunities for improvement and deserve equal attention.

In the case of Navy procurement organizations, exceptional buying proficiency deserves investigation as much as poor buying proficiency.

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[55] Ibid.

E. TAKING ACTIONS TO IMPROVE OPERATIONS

Deciding on an appropriate course of action for handling a deviation from the standard, or exercising control, is the final stage of the management control process. The course of action chosen may be direct or indirect.

Direct control occurs when the corrective action is administrated directly by those who conduct the control analysis. Indirect control generally involves encouragement and guidance from non-operating personnel (staff) on what course of action to pursue based on quantitative and qualitative analysis of the operating system.[56]

The exercise of control is usually a complex process which involves working through people to uncover problem areas and take corrective action. Therefore, a knowledge of methods for minimizing disfunctional behavior is essential to helping managers exercise effective management control.

F. MINIMIZING DYSFUNCTIONAL BEHAVIOR

Behavioral science is the study of human behavior, whether in groups or as individuals, to increase the understanding of human beings in social relations.[57]

Behavioral science is important because it helps managers understand and direct people better. It provides tools for effectively introducing innovations and changes, resolving

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[56] Ibid, p. 270.

[57] Harold M. Rush, "What Is Behavioral Science?", The Conference Board Record, (September, 1965), p. 36.

organizational conflicts, stimulating creativity, and developing strong leaders.[58] Thus, behavioral science encompasses many aspects of human behavior which are vital to management control. Two of these are discussed in this section:

1. What motivates people in their work environment?
2. How to direct people more effectively.

1. What Motivates People In Their Work Environment?

People are motivated to work in order to satisfy needs. Needs include all those feelings which may be satisfied by "posterior stimuli."[59] They embrace such concepts as the need for preserving life, for social relationships, and for status. The human needs which the procurement manager is primarily interested in are those that can be satisfied within the organizational structure.

To motivate is to induce people to act in a desired manner.[60] Human beings cannot be made to perform specific activities; they either perform by their own free will or they are persuaded to perform in some prescribed fashion. Thus, the application of human resources to achieve acceptable performance levels can only be accomplished through effective persuasion. This is why the process of motivation is vital to exercising effective management control.

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[58]Maneck S. Wadia, Management and the Behavioral Sciences: Text and Readings, (Allyn and Bacon, Inc. 1968), p. 22.

[59]Harold Koontz and Cyril O'Donnel, Principles of Management: An Analysis of Managerial Functions, (McGraw-Hill, 1972), 5th ed., p. 526.

[60]Ibid, p. 525.

Understanding the reasons why people behave the way they do in the procurement organization is an important first step towards controlling behavior. Once behavior is understood, prediction and control of behavior is much easier.[61]

2. How to Direct People More Effectively

To exercise adequate management control the procurement manager must be able to lead and direct effectively. The driving force which impels people to act is motivation, and the procurement manager must identify motives if he desires to stimulate effective action in subordinates.

Participation by subordinates in setting their goals and standards has proved to be an effective way to stimulate better achievement in areas where the work involved is not structured. In addition, involving the individual in the standard setting process gives a sense of belonging and understanding of the required performance parameters.

Operating personnel should know to what degree they have met the performance standards. The procurement manager should communicate his judgement of subordinate achievement levels, discuss the reasons for his assessment, give guidance for performance improvement, and encourage communications from subordinates. This should be done periodically.

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[61]Chris Argyris, Personality and Organization (Harper and Row, 1957), p. 5.

In addition to understanding the control evaluation process, operating personnel should have a clear picture of where they fit in the overall operation. This will help them identify with the operation and its objectives. Periodic Command briefs on the role of procurement personnel in the overall procurement organization mission is a good method of accomplishing this goal. Additionally, the mechanics of the rewards system for recognizing superior performance should be communicated to all operating personnel.

Leadership involves more than understanding motivation techniques, defining jobs and their objectives, keeping operating personnel informed, appraising performance periodically, and rewarding superior performance. Leadership has been defined as "interpersonal influence, expressed in situations and directed, through the communication process, toward the attainment of a specified goal or goals."[62]

Leadership is the ultimate skill with which a manager brings success by combining human resources and organizational objectives into acceptable achievement.

Leadership also involves resolution of conflicts between organizational components. Maier recommends considering quality and acceptance when attempting to resolve conflicts.[63] Quality refers to the objective features of a

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[62]Robert Tannenbaum, Irving R. Weschler and Fred Massarik, Leadership and Organization: A Behavioral Science Approach, (McGraw-Hill, 1961), p. 24.

[63]Normal F. Maier, Problem-Solving Discussions and Conferences: Leadership Methods and Skills, (McGraw-Hill, 1963), p. 3.

solution – was the decision based on the objective facts? Acceptance refers to the level of acceptance the organizational components involved in the conflict have for the solution. High quality and high acceptance are both needed for effective decisions.[64]

When attempting to resolve conflicts, the procurement manager must recognize when he is dealing with facts and ideas and when he is confronted with feelings and biases.[65] This is essential since the methods for dealing with facts are different from those for dealing with feelings. Thus, diagnostic skill is a leadership requirement (Maier summarizes eight principles for conflict resolution).[66]

Maier concludes:[67]

> Actually the skill requirements are not difficult to learn. The problem lies with the interference caused by old habits. Once one can break away from these and get a fresh start, the battle is half won. The first step is to recognize the existence of qualitative distinctions. No one skill is best for all purposes. If the basic distinctions are made, progress in each area becomes relatively easy.

The ability to resolve conflicts satisfactorily is particularly important to procurement managers since differences among vendors, customers and organizational components

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[64] Ibid, p. 253.

[65] Ibid.

[66] Ibid.

[67] Ibid.

frequently permeate the procurement arena. These conflicts must be resolved quickly and fairly to maintain effective procurement operations and ensure that customer needs are satisfied expeditiously.

IV. EVALUATION OF SELECTED PROCUREMENT MANAGEMENT CONTROL SYSTEMS

A. EVALUATION METHODOLOGY

The effectiveness of the procurement management control systems being used at NSC Puget Sound, NSC San Diego and NRPO Long Beach was evaluated using the following criteria:

1. Procurement Planning – An analysis of the planning and decision-making processes employed at the procurement organization, a determination of the degree of participation by the various levels of management, and the attitude toward change and innovative ideas.

2. Procurement Research – An analysis of the utilization of resources to improve policies and procedures, organizational structure, job descriptions and other procurement activities to develop or enhance procurement planning and control systems. Economic projections and special projects are also included in this criterion.

3. Management Information System (MIS) – An analysis of the extent to which the MIS satisfies information and communication needs and automates routine functions.

4. Organizational Structure – An analysis of the appropriateness of the organizational structure for enhancing responsiveness to customer needs, facilitating the decision-making process and promoting efficient operation of the procurement process.

5. Career Development – An analysis of the degree to which the training and career development programs meet the organization's training and career development goals and objectives.

6. Performance Standards – An analysis of the process for creating and communicating performance standards and how deviations from these performance standards are handled.

7. Work Measurement and Productivity – An analysis of the procedures used to document work accomplishment and the methods employed to monitor productivity.

NAVSUP currently uses three indicators to monitor the effectiveness of NAVSUP field procurement organizations:[68]

1. Quality – Subjective evaluations by Procurement Management Review (PMR) teams, Inspector General (IG) audits and other reviews.

2. Customer Satisfaction – Evaluation of customer feedback and how well PALT (Procurement Administrative Lead Time) objectives are met.

3. Numerical Measures – Evaluation of PALT, productivity, incoming purchase requests, completed purchase actions and purchase actions in process.

Therefore, these three indicators were included in the effectiveness determination process.

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[68]Tom Deback, Procurement Policy and Plans Division, Naval Supply Systems Command, Address to NAVSUP Procurement Conference, Washington, D. C., 17 May 1978.

B. PROCUREMENT PLANNING

All three of the procurement organizations evaluated conduct their planning and decision-making processes in a similar manner. They review historical data and analyze current operation levels to develop a procurement plan. This process includes the expected procurement expenditures by major customer activities (inputs are solicited from customers concerning the anticipated level of funding, new missions which might require contracting out, and known contracting requirements). Subjective evaluations are made of the collective information to develop the organizational plan based on the forecasted level of operations.

The different levels of management interject their inputs and observations as the data is assimilated and forwarded up the managerial hierarchy.

Each of the three procurement organizations evaluated appeared to be receptive to suggestions and innovative ideas from subordinates. Additionally, the atmosphere seemed conducive to encouraging aggressive management techniques and exercising sound judgement.

It was noted that NSC Puget Sound and NSC San Diego seemed to devote most of their procurement resources to exercising control over current operations. This results in too little procurement resources being used to support planning (especially long range). But NSCs do have planning departments which perform the planning function for the NSC as an organizational entity.

NRPO Long Beach appeared to spend considerably more time thinking about the future (strategic planning) to anticipate the requirements and operating levels which are likely to occur in the future and the missions and roles the organization may be called upon to perform.

Reasons for these differences may be:

1. That NRPO Long Beach is exclusively a procurement organization while NSC Puget Sound and NSC San Diego are procurement departments within large organizations and must fight for scarce organizational resources.

2. NRPO Long Beach has more resources (staff personnel) available for supporting the planning process than the NSCs.

C. PROCUREMENT RESEARCH

Each of the three procurement organizations evaluated actively studied the procurement process within their resource constraints – analyzing the organization's short- and long- range requirements and studying the procurement system (administrative procedures and special projects, e.g., vendor relations, special reports) to find ways to improve the procurement operation. It was noted, however, that the NSCs lacked adequate resources or the planning departments had higher priorities which precluded conducting the magnitude of research which was done at NRPO Long Beach.

D. MANAGEMENT INFORMATION SYSTEM (MIS)

It was noted that NSC Puget Sound and NRPO Long Beach used more extensive MIS systems since their operations are

larger in scope and more complex than NSC San Diego's procurement operation. This required better information and communication networks to support the procurement processes at NSC Puget Sound NRPO Long Beach.

NAVSUP is currently implementing APADE II (Automation of Procurement and Accounting Data Entry II) at major field procurement organizations. "The primary objective of APADE II is to provide an automated system that facilitates the administration, control and processing of all requisitions and purchase requests within the procurement component. This sytem is designed to encompass the life of a procurement action beginning with the receipt, by the procurement component, of a requisition, and ending with the recording of material receipt data. APADE II will enable buying activities within the Navy Field Purchasing System to improve supply system responsiveness to support fleet and shore activities."[69] Another objective of APADE II is a reduction in PALT. Specific APADE II objectives are outlined in Appendix B and a summary of improvements is provided in Appendix C.

E. ORGANIZATIONAL STRUCTURE

Both NSC Puget Sound and NSC San Diego conform to the standard organization provided for Naval Supply Center

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[69]U. S. Department of the Navy, "Automation of Procurement and Accounting Data Entry II (APADE II), Functional Description," Fleet Material Support Office, (Mechanicsburg, Pennsylvania), 15 May 1978.

Procurement Departments.[70] Appendix D illustrates the current NAVSUP organization for NSCs and the accompanying functional statements.

NRPO Long Beach has a similar organizational structure headed by the Officer in Charge with a large number of internal staff specialists and a Regional Procurement Management Staff reporting to him. There is a Contract Division and a Small Purchase Division with the Contract Administration function being performed within these two divisions. Both of these organizational structures (NRPO and NSC) enhance responsiveness to customers and promote efficient procurement operations.

F. CAREER DEVELOPMENT

All three procurement organizations adhere to NAVSUP training and career development directives. NRPO Long Beach also utilizes private industry training programs on a regular basis. NRPO Long Beach stresses membership and participation in the National Contract Management Association (NCMA) Certified Professional Contracts Manager (CPCM) program. The NSCs do not emphasize NCMA participation to the same degree. All three procurement organizations are meeting or exceeding the career development and training goals established by NAVSUP. However, NRPO Long Beach appeared to have a

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[70] U. S. Department of the Navy, NAVSUP Manual, Vol. I, Chapter 1, par. 11063, subpar. 13.

higher degree of professional status and interest in achieving expertise in procurement management. The two Naval Supply Centers did seem motivated toward enhancing professionalism and procurement management expertise.

It was observed that participation in the NCMA membership and certification programs and utilization of private industry procurement training opportunities enhanced career development effectiveness.

G. PERFORMANCE STANDARDS

All three procurement organizations use level of difficulty and the level of procurement proficiency expected at each grade classification to create and upgrade performance standards. These performance standards are communicated through procurement manuals, formal training and on-the-job administrative training procedures. Deviations from the prescribed standards are investigated to determine their causes and assure that action is taken to prevent their reoccurrence.

NRPO Long Beach had a more extensive application of the level of difficulty philosophy which is documented in the "NRPO Long Beach Procurement Supervisor's Position and Employee Management Handbook". This manual is particularly useful in determining standard levels of difficulty and assigning purchase requests to the appropriate skill/grade level. This program was developed by the Technical Assistant whose function is to "...serve as policy advisor and consultant

to the officer in charge on procurement policies, procedures, and special purchases; render assistance on other matters as assigned by the officer in charge."[71]

Naval Supply Centers do not have technical assistants assigned. In fact there are no staff positions assigned specifically for policy advice, procedure consultation, and support of the management control process.

H. WORK MEASUREMENT AND PRODUCTIVITY

Each procurement organization evaluated charges labor hours to one of the cost accounts defined in Appendix A. Then the work units for each cost account are divided by the number of hours charged to the cost account to determine the productivity rate for the period being considered. Deviations from productivity goals are investigated to ascertain the reasons for their occurrence.

I. NAVSUP EFFECTIVENESS INDICATORS

The quality of the procurement operations at the three organizations being evaluated appear to be very high based on recent Inspector General (IG) audits and Procurement Management Reviews (PMR). There was excellent customer satisfaction based on random telephone calls to several customer activities. All three procurement organizations

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[71]U. S. Department of the Navy, NAVSUP MANUAL, Vol. I, Introduction to Supply (Washington, D. C., 1966), p. 1-64.

were experiencing increasing workloads and higher than normal turnover of personnel in the small purchase component.

The most acute problem was at NSC San Diego where the procurement organization is making the largest transition. NAVSUP letter of 22 September 1976 authorized NSC San Diego to increase authority from $10,000 firm fixed price to $100,000 unrestricted as to type of contract. This was indicated in the numerical measures – PALT was substantually above the NAVSUP objective for small purchases (28 days versus 10 days), incoming requisitions were increasing and backlog and inprocess purchase actions were also increasing.

The NAVSUP indicators appeared to give a good picture of how effective the procurement organizations were at achieving current operating objectives. But the indicators did not provide insight as to why deviations occurred and possible means for correcting negative situations and commending positive results. The NAVSUP indicators do not provide feedback on the effectiveness of the procurement organization's planning activities.

J. CONCLUSION

1. The three procurement organizations evaluated are performing their management control functions in an effective manner. NSC Puget Sound and NRPO Long Beach appear to have better management control systems than NSC San Diego. In addition, APADE II will enhance the procurement management

control system by providing accurate information when it is needed and at the appropriate organizational level.

2. There does appear to be a need for an overall framework which delineates the information and communication flows required to maintain effective management control. The planning and control processes need to be conducted in concert with each other for increased effectiveness. Systematic methods of organizing and analyzing new ideas, processes and procedures and determining the limits of applicability need to be employed. In short, the framework should facilitate the management control process.

A framework is required to minimize the possibility of inequities in applying organizational resources to planning and management of current operations. Since time spent planning (thinking about the future) is taken from time that could be used in exercising control over current operations, it is perceived that planning (particularly strategic planning) could hurt current performance (as perceived by NAVSUP). There must be a mechanism (and NAVSUP support) for attaining the "right" balance between planning and management of current activities. Such a framework is proposed in Chapter V.

V. PROPOSED PROCUREMENT MANAGEMENT CONTROL MODEL

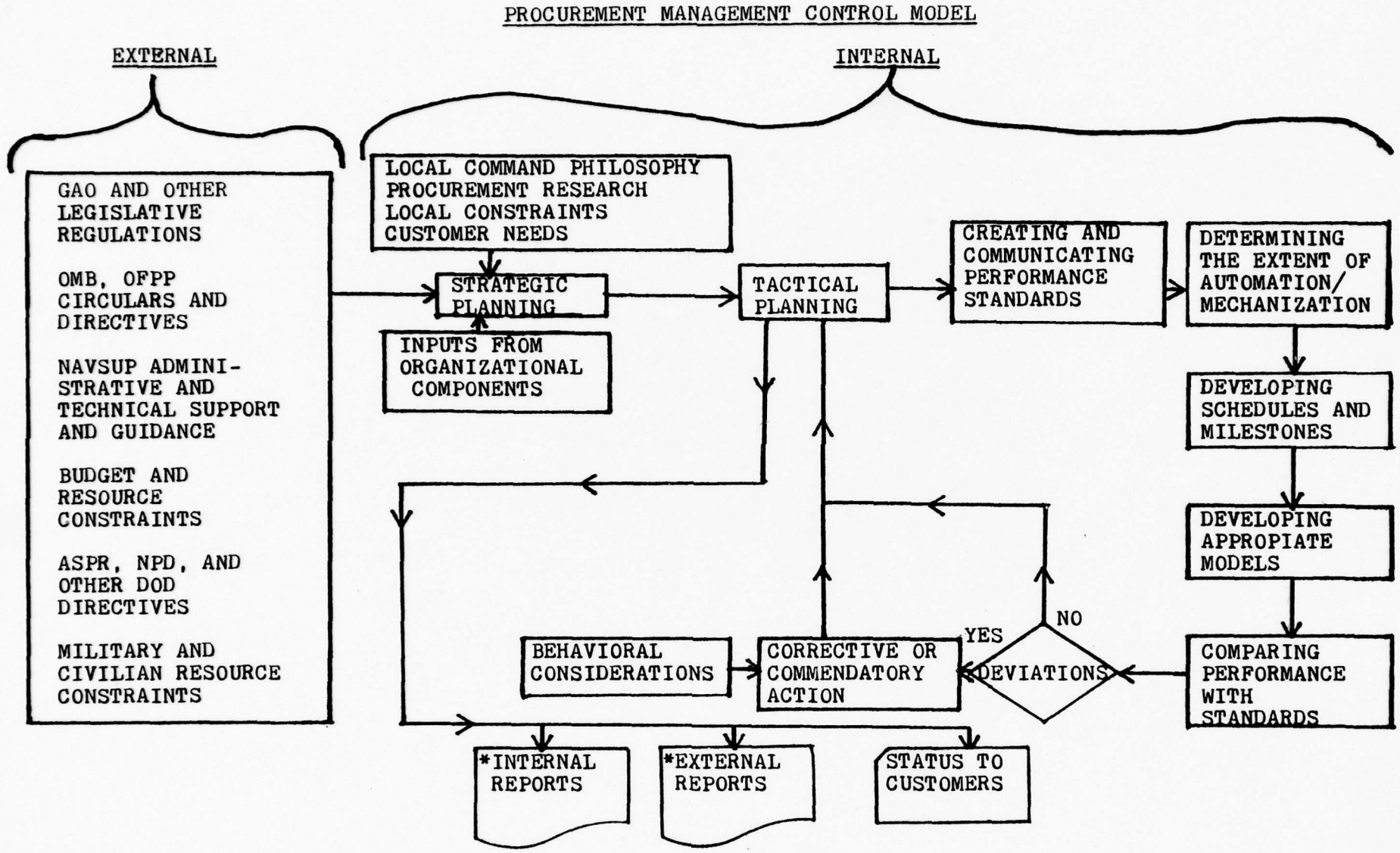
A. THE MANAGEMENT CONTROL CONCEPT

Since control means keeping things on track, the first step is to lay out a clear track – establishment of long range goals which are consistent with the procurement organization's mission. Accordingly, the objectives and means for accomplishing these objectives must be delineated prior to implementing the management control system. The external environmental factors must be recognized and evaluated along with internal organizational variables. Contingency programs must be devised for critical events with high risks. The organizational atmosphere should be conducive to facilitating aggressive innovative management techniques and exercise of sound judgement.

Standards must be established for performance measurement. The tracking system should be sensitive enough to provide early identification of potential as well as real problem areas and analysis of deviations to detect the underlying causes. The tracking system should focus on situations rather than on individual operating personnel and indicate feasible solutions when practicable. Finally, the tracking system should be economical and effective.

B. THE MODEL

The procurement management control model illustrated in Figure 7 takes into account all of the factors outlined



* THIS INCLUDES FINANCIAL AND ACCOUNTING REPORTING REQUIREMENTS.

FIGURE 7

in the preceding section. The external factors which impact on the planning process (directions from higher authority, budget and resource constraints and NAVSUP administrative and technical support and guidance) are recognized. The strategic planning process is influenced by local resource constraints, the local command philosophy and inputs from organizational components. Procurement research influences strategic as well as tactical planning by recognizing potential problem areas and developing proposals for new or more effective solutions to problems. Customer needs are also considered in the strategic planning process. The model next develops the specific courses of action for implementing the organization's "master plan" — the tactical planning process begins, performance standards are created or improved and communicated to operating personnel, the degree of automation of routine functions is determined, and schedules and milestones are developed.

Appropriate models should be developed to aid operating personnel and procurement managers when making decisions and conducting technical procurement functions.

Next performance is compared with the performance standards to determine if deviations have occurred. If corrective or commendatory action is required, the probable behavioral reactions must be considered and dealt with if required.

Finally, periodic and ad hoc reports along with status to customers must be generated. Ideally these reporting requirements should be satisfied by the organization's MIS.

VI. THESIS RECOMMENDATIONS

Based on the analysis of the three NAVSUP field procurement organizations evaluated in this thesis, the following recommendations are proposes to improve management control in the Navy Field Procurement System.

1. That additional resources at Naval Supply Centers be devoted to procurement research to enhance local procurement planning and management control.

2. That NAVSUP investigate the feasibility of utilizing Navy graduate students for empirical procurement research and analysis of the procurement process.

3. That NAVSUP actively support membership in the National Contract Management Association (NCMA) and the NCMA Certified Professional Contracts Manager (CPCM) certification program for all procurement management personnel. This will further NAVSUP career development goals and promote the exchange of ideas among public and private procurement personnel. Additionally, the level of professional stature of NAVSUP procurement personnel should be elevated.

4. That maximum use of approved private industry procurement training be employed to supplement and improve NAVSUP training objectives.

5. That further study be conducted toward implementing the proposed model on management control at NAVSUP Field procurement organizations.

APPENDIX A

NAVSUP PROCUREMENT COST ACCOUNTS

2700 PROCUREMENT OPERATIONS

2721 PURCHASE DOCUMENT CONTROL

Scope. This cost account includes processing incoming purchase requests and other documents into the purchase division/department including recording all incoming requisitions and maintaining necessary control records to monitor their progress through the procurement cycle; examination of each requisition and other documents; and direct supervision of the foregoing operations. This cost account includes effort or accomplishments of a procurement action subsequent to issuance of solicitations for bids/proposals/quotations such as providing specifications or drawings, or answering inquiries concerning the procurement cycle.

Work Unit. Purchase request received.

(1) Definition. The numbers of purchase requests received in the purchase organization during the reporting period for processing by small or large purchase actions. Unfunded purchase requests (or incomplete procurement packages) which are received and distributed within the purchase organization for processing should be counted as a receipt. Unfunded purchase requests (or incomplete procurement packages) which are held in abeyance until funding is available (or package completed) should be counted as a receipt when distributed.

– Large Purchases are those purchases to be accomplished by any contract method other than small purchase methods defined below.

– Small Purchases are those purchases accomplished in accordance with the procedures set forth in Section III, Part 6 of ASPR, including orders under contracts exceeding $10,000 when processed by small purchase methods and orders processed against contracts on a Time and Material or Labour Hour basis by small purchase agents.

(2) Point of Count. Upon receipt at the purchase receipt/control component.

(3) Backlog. Will not be reported.

2700 PROCUREMENT OPERATIONS

2722 LARGE PURCHASE BUYING OPERATIONS

Scope. This cost account includes all effort in the buying operations component of the purchasing component of the activity which is related to a large purchase action and which is performed: (1) prior to the preparation and issuance of invitations for bids or requests for proposals; (2) during the solicitation phase; and (3) after receipt of bids and proposals. This effort includes reviewing pre-purchase request planning requests for case actions to determine method of purchase and the preparation of rough drafts and/or check lists for solicitations and/or contractual documents; discussion with the initiation of the requirements; coordinating with the Small Business Specialist; conducting market surveys to develop new sources of supply, determining availability of material, obtaining current information regarding labor price trends; analyzing offers, cost and price analysis, conducting negotiations with contractors; and selecting a contractor for award of orders and contracts; and first line supervision and clerical support for the foregoing operations. This cost account excludes effort expended under Cost Account 2729, Office Management and Administration, and actual clerical effort related to typing solicitations and contractual documents (Cost Account 2723, Large Purchase Solicitation and Contract Production).

Work Unit. Purchase case files completed

(1) Definition. The total number of purchase case files completed or cancelled in the buying operation component during the reporting period by large purchase action. Large purchases are defined under Cost Account 2721, Purchase Document Control. (On NAVSUP Form 80, Purchase Statistics, completions and cancellations will be reported separately.)

(2) Point of Count. Upon notice of award or acceptance by the contracting officer. Cancellations will be counted at the time the requisitions are returned to the initiator.

(3) Backlog. The number of purchase case files on hand in the buying operation component at the end of the reporting period. Technical referrals are to be included.

2700 PROCUREMENT OPERATIONS

2723 LARGE PURCHASE SOLICITATION AND CONTRACT PRODUCTION

Scope. This cost account includes the clerical effort related to the preparation and production of invitations for bids and requests for proposals; preparation and production of all contracts, awards, acceptance and related solicitations and contractual documents; distribution of these documents; and first line supervision of the document production operations.

Work Unit. Purchase documents.

(1) Definition. Total number of official large purchase documents prepared during the reporting period. (Includes Invitation for Bids, Request for Proposals, official contract documents). If a completed purchase document reenters the document production component for any rework, it will not be counted as a new completion unless substantially retyped. This cost account does not include contract modifications.

(2) Point of Count. Upon release of purchase documents from the purchase document production component.

(3) Backlog. Number of purchase documents on hand awaiting preparation at the end of the reporting period.

2700 PROCUREMENT OPERATIONS

2724 LARGE PURCHASE MODIFICATION AND DOCUMENT PRODUCTION

Scope. This cost account includes clerical effort related to the preparation and production of modification to contracts, supplemental agreements, show cause letters, other post award contractual documents and correspondence, distribution of these documents; and first line supervision of the operation.

Work Unit. Contract Administration Documents.

(1) Definition. Total number of official large purchase documents prepared during the reporting period in support of the contract administration function (Cost Account 2821, Large Purchase Contract Administration).

(2) Point of Count. Upon release of document from preparation/typing component.

(3) Backlog. Number of documents on hand awaiting preparation at the end of the reporting period.

2700 PROCUREMENT OPERATIONS

2726 SMALL PURCHASE BUYING

Scope. This cost account includes all the effort in the buying operations component which is related to a small purchase request and which is performed: (1) prior to the preparation and issuance of requests for quotations; (2) during the solicitation phase; and (3) after receipt of quotations. This effort includes reviewing purchase requests to determine the method of purchase and the preparation of rough drafts and/or checklists for solicitations and/or contractual documents; conducting negotiations with prospective contractors; analyzing quotes; making determinations of awards; and consummating Blanket Purcahse Agreements (BPAs); and first line supervision of and clerical support for the foregoing. (This cost account excludes clerical effort related to typing solicitations and contractual documents.) (See Cost Account 2727, Small Purchase Solicitation and Order Production.)

Work Unit. Purchase requests completed.

(1) Definition. The number of purchase requests completed or cancelled in the buying operation component during the reporting period by small purchase action. Small purchases are defined under Cost Account 2721, Purchase Document Control. (On NAVSUP Form 80, Purchase Statistics, completions and cancellations will be reported separately.)

(2) Point of Count. Upon notice of award or acceptance by the contracting officer. Cancellations will be counted at the time the requisitions are returned to the initiator.

(3) Backlog. The number of uncompleted small purchase requests on hand in the buying operation component at the end of the reporting period. Referrals for technical clarification are to be included.

2700 PROCUREMENT OPERATIONS

2727 SMALL PURCHASE SOLICITATION AND ORDER PRODUCTION

Scope. This cost account includes the clerical effort related to the preparation and production of requests for quotations; preparation and production of all orders, purchase orders and related solicitations and contractual documents and distribution of these documents; and first line supervision of the document production operations.

Work Unit. Purchase documents.

(1) Definition. Total number of official small purchase documents prepared during the reporting period. (Includes delivery orders, Request for Quotations, purchase orders, etc.) If a completed purchase document reenters the document production component for any rework, it will not be counted as a new completion unless substantially retyped.

(2) Point of Count. Upon release of purchase documents from the purchase document production component.

(3) Backlog. Number of purchase documents on hand awaiting preparation at the end of the reporting period.

2700 PROCUREMENT OPERATIONS

2728 SMALL PURCHASE MODIFICATION AND DOCUMENT PRODUCTION

Scope. This cost account includes clerical effort related to the preparation and production of modification to purchase orders, supplemental agreements, show cause letters, other post award contractual documents and correspondence; distribution of these documents; and first line supervision of the operation.

Work Unit. Contract Administration Documents.

(1) Definition. Total number of official small purchase documents prepared during the reporting period in support of the administration function (Cost Account 2822, Small Purchase Administration).

(2) Point of Count. Upon release of document from preparation/typing component.

(3) Backlog. Number of documents on hand awaiting preparation at the end of the reporting period.

2700 PROCUREMENT OPERATIONS

2729 OFFICE MANAGEMENT AND ADMINISTRATION

Scope. This cost account includes the maintenance of bidders' lists; receipt and recording of all bids and proposals; public openings and abstracting of bids; providing information on bid procedures, invitations for bids, and commodity purchase assignments; providing additional bid sets as required; issuance of specifications and drawings to prospective bidders; operation of the imprest fund cashier; maintaining purchase files; clerical support resulting from manual (and automated purchases not identified elsewhere including TELEX operations; and first line supervision of the foregoing operations.

Work Unit. This cost account is not measured by a specific work unit.

2700 PROCUREMENT OPERATIONS

2790 PROCUREMENT OVERALL MANAGEMENT

2791 PROCUREMENT MANAGEMENT

Scope. This cost account includes over-all management of the procurement organization including formulation of policy, advance procurement planning, coordination of requirements for fiscal, legal, logistics and other internal organizations; coordination with higher echelons of defense management, Defense Logistics Agency or other agencies preparing DOD reports (DD 350, Individual Procurement Action Report; and DD 1057, Monthly Procurement Summary Of Actions $10,000 or Less), NAVSUP Form 80, Purchase Statistics, and any other procurement reports second level and above supervision and clerical support applicable to more than one cost account under the 2700 or 2800 series.

Work Unit. This cost account is not measured by a specific work unit.

2700 PROCUREMENT OPERATIONS

2790 PROCUREMENT OVERALL MANAGEMENT

2792 FIELD MANAGEMENT

Scope. This cost account includes rendering functional management assistance, i.e., technical assistance, guidance and other aspects of functional management for purchase operations, to Navy Field Procurement Activities and Resale Activities such as Commissary and Exchanges, located with the NRPOs/NSCs assigned geographical area of responsibility, participation in Procurement Management Review's (PMR's), Inspector General (IG) review's, etc., and clerical support and first line supervision of the foregoing operations.

Work Unit. This cost account is not measured by a specific work unit.

2800 CONTRACT ADMINISTRATION

2821 LARGE PURCHASE CONTRACT ADMINISTRATION

Scope. This cost account includes all large purchase effort on the part of the Procurement Contracting Officer (PCO) related to the contract administration function from the time of contract award through contract completion, including assuring that contractor performance is in accordance with contractual commitment, obtaining and analyzing contractor performance data; maintain and making available, records of contractor performance; preparing reports for management on contractor performance; checking delays and recommending remedial action on delinquent contracts and orders; processing default actions and termination; issuing change orders and obtaining contractor acceptance of supplemental agreements; visiting contractors' plant, and first line supervision of contracts. This cost account includes contract administration when performed by buying personnel. This cost account excludes manhours and work units for new procurement being processed as a contractual modification which will be reported under CA 2722, Large Purchase Buying Operations.

Work Unit. Contract Administration Actions

(1) Definition. Telephonic, verbal or written follow-ups or requests from customers, contractors, or others, for expedite, cancellation, status or modification of contract. Multiple requests will be counted, unless a follow-up to a previous request.

(2) Point of Count. Completion of action.

(3) Backlog. Number of administrative actions on hand at the end of the reporting period awaiting completion.

2800 CONTRACT ADMINISTRATION

2822 SMALL PURCHASE ADMINISTRATION

Scope. This cost account includes all small purchase effort on the part of the Procurement Contracting Officer (PCO) related to the contract administration function from the time of order/contract award through contract completion, including assuring that contractor performance is in accordance with contractual commitment, obtaining and analyzing contractor performance data; maintaining, and making available, records of contractor performance; preparing reports for management on contractor performance; checking delays and recommending disciplinary action of delinquent contracts and orders; processing default actions and terminations; visiting contractors' plants; modification and review of BPA's; and first line supervision of contract administration. This cost account includes administration when performed by buying personnel. This cost account excludes man-hours and work units for new procurement being processed as a modification which will be reported on CA 2726, Small Purchase Buying Operations.

Work Unit. Contract Administration Actions

(1) Definition. Telephonic, Verbal or written follow-ups or requests for expedite, cancellation, status, or modification of purchase orders, delivery orders, or BPA orders. Multiple requests will be counted, unless a follow-up to a previous request.

(2) Point of Count. Upon completion of action.

(3) Backlog. Number of administrative actions on hand at the end of the reporting period awaiting completion.

2800 CONTRACT ADMINISTRATION

2890 CONTRACT ADMINISTRATION MANAGEMENT

Scope. This cost account includes second level supervision and above of the contract administration function, including clerical and support services. Actual clerical effort related to typing modifications, change orders, supplemental agreements, etc., will be charged to Cost Account 2724, Large Purchase Modification and Document Production, or 2728, Small Purchase Modification and Document Production.

Work Unit. This cost account is not measured by a specific work unit.

APPENDIX B

APADE II OBJECTIVES

Perhaps the most important indicator of procurement performance is procurement administrative lead time (PALT). A primary APADE II objective and expectation is a reduction in PALT. Each of the major system features of APADE II, along with unique benefits, helps bring about a reduction in PALT and a concomitant increase in fleet support. Specific system objectives are outlined below.

2.2.1 Improved Status Information and Document Control. Accurate and timely information on status of a procurement action is essential to effective procurement management. On purchases requiring long lead-times, priority actions, and certain other purchases, it is essential to have a procurement plan and the ability to display planned, actual and revised milestones.

2.2.2 Reduced Document Preparation Time. A nine percent decrease in document preparation time will be achieved through use of the APADE II system. The following documents will be produced on ADP peripheral equipment:

a. Solicitation Documents
b. Contracts
c. Agreements
d. Amendments and Modifications to the above.

2.2.3 Improved Accuracy of Data in System Files. APADE II will incorporate source data automation (SDA) techniques to ensure improved timeliness and accuracy of data in APADE II files while deleting redundant and duplicative manual operations. Once data is in machine processible form, it can be exchanged between systems with one thousandth the error rate which takes place in manual keyboard operations. Under SDA techniques, one manual keyboard operation serves all users. Each "data item" entered has an originator and, where possible, the originator should put the data in machine processible format. Accuracy is also enhanced by having all data entry operations centralized at a control point in Purchase Document Control and Document Production operations.

2.2.4 Improved Buyer Efficiency. Buyers in virtually every Navy procurement component studied must work at a demanding pace to maintain required output. Little time is available for seeking new sources or forecasting the future buying environment. APADE II will provide to buyers and other procurement personnel, Automated Bidder's Lists and Price History Reports which will provide improved information at greatly reduced effort. Moreover, improved status information available to the Purchase Document Control point will free buyers from non-buying functions related to customer requests for requisition status.

2.2.5 Improved Procurement Planning and Management. Through timely reports tailored to current management needs, the manager will be able to more readily assess and attack potential problems. Reports of present and future workloads facilitate training, scheduling and assigning procurement personnel. Planned milestones can provide projections of future workloads by work center. On-line query will provide immediate decision support for crisis handling. Bulky, characteristically outdated printed reports will be largely replaced by as-needed reports and exception reports.

2.2.6 Better Interchange of Data Among Logistic and Financial Systems. Procurement information has, for the most part, been conveyed via printed contractual documents. It is not unusual to distribute sixty copies of a single contract. Recipients include requiring activities, contract administration offices, disbursing offices, accounting activities, consignees, and project managers. Each of these activities manually extracts data from these printed pages (each page being somewhat unique to a given purchasing office) and enters data into its system files. Similarly, requirements, material receipt, contract completion, accounting data and other information required by procurement components is generally transmitted via printed copy. The foregoing procedures are slow, labor intensive and fraught with errors. APADE II will provide for receipt and transmission of data across system interfaces in a variety of machine processible

formats. Under APADE II entire contract abstracts will be available in machine processible format making possible enormous savings in clerical, distribution, printing and mailing costs.

2.2.7 Savings/Cost Avoidance. Savings or corresponding cost avoidance accrue through virtually all system features. Productivity increases will result from automated document production, ADP support of document control operations and, eventually, electronic transmission of contract data. As interfacing activities gain confidence in machine processible outputs, the printing, mailing and distributing costs will decline. As buyers are freed from non-buying tasks and are provided with better information, they will be enabled to negotiate contracts more favorable to the Navy. Similarly, improved sharing of information relative to procurement history among procurement activities will result in better buying arrangements.

2.2.8 Improved Responsiveness. APADE II will improve the responsiveness of the overall Naval Supply System to the needs of the Fleets and the Shore Establishment of the Navy.

2.2.9 Reduction in PALT. APADE II will support procurement managers in meeting NAVSUP PALT objectives. In addition, through the ability to better analyze PALT, managers will be better able to control fluctuations in required lead time.

APPENDIX C

SUMMARY OF APADE II IMPROVEMENTS

2.4.1 Summary of Improvements. Those features identified in 2.4 above carry benefits in terms of the objectives described in section 2.2. The principle APADE II benefits are increased capacity to handle assigned work units and corresponding improved performance. Annual savings or cost avoidance of $958,000 (FY 77 Dollars) were identified in ADS plan as possible through productivity increases illustrated in Figure 8.

APADE II is a standardized system which will be exportable throughout the Navy's procurement community. Such standardization of information flows causes a corresponding standardization of organizational structures. The secondary effects are reduced costs and improved effectiveness in the areas of defining position descriptions, determining personnel qualifications, selecting and training personnel, establishing information requirements, setting performance goals, measuring results, taking corrective action, and rewarding outstanding performance. Another effect of providing adequate information resources to procurement managers is improved planning. Through projected milestone, price history and workload reports the management and supervisory personnel can forecast the environment, set measurable objectives, develop strategies, program long range needs, budget, and update policies and procedures. Specific benefits include:

WORK UNIT	ACTIVITY (M/HR)	OBJECTIVE (% REDUCTION)	SAVINGS MAN HRS (M/HR)
2721	79,700	4.5	3600
2722	1,156,000	4.5	52000
2723	414,800	9	37300
2724	50,400	9	4500
2725	424,700	9	38200
2791	251,300	4.5	11300
2792	65,600	2.5	1600
2700 Total	2,442,500	6%	148,500
2820	308,400	4	12300
2890	66,900	4	2700
2800 Total	375,300	4%	15,000
Overall Total	2,817,800		163,500

Figure 8. APADE II Objective Reductions/Manhour Savings

a. Reduction in PALT

b. Increase in productivity

c. Reduction in editing and file maintenance

d. Reduction in distribution costs

e. Reduction in mail costs

f. Improvement in management reporting

g. Improvement in tracking, milestone reporting and planning

h. Improvement in reporting of work units against appropriate cost accounts

i. Reduction in printing costs for correction of deficiencies.

2.4.1.1 Functional Improvements. Each of the system deficiencies identified in paragraph 2.3.4 will be removed or significantly improved by implementation of APADE II. New capabilities include the following:

a. Procurement Tracking/Document Control. APADE II will provide on-line access to the Procurement Requisition File and Milestone Event File. Such information is the underpinning of the procurement function. In seconds, a console operator will be able to call up and display a requisition including planned, revised and actual milestone dates (Appendices B-21, and B-22). Managers will use such information in allocating resources against requirements, scheduling leave, training personnel, assigning personnel, and establishing priorities. Purchase Document Control

personnel will be able to provide rapid response to customer queries as to PR status. This feature is curative of the deficiencies set forth in 2.3.4.3 and 2.3.4.4.

b. Automated Preparation of Standardized Format Procurement Documents. APADE II will provide the capability to update Purchase Requisition and Procurement Information files as a PR is processed. When all buyer actions have been accomplished prior to a solicitation or award and necessary data entry has been made, an operator need only give a print command for formal procurement documents to be printed on a high-speed printer. This feature is curative of deficiencies set forth in 2.3.4.2, 2.3.4.6, 2.3.4.11, and 2.3.4.18.

c. Source Data Automation. APADE II will incorporate principles of both source data automation and source data generation. To the extent possible, APADE II will receive external inputs in machine processible form. Accurate data entry is ensured through control of internal input points and procedures. This feature is curative of deficiencies set forth in 2.3.4.11 and 2.3.4.18.

d. Procurement Management Information Reporting. Management reports will be available for immediate retrieval. Frequently used reports will be designed for rapid retrieval via video display or in printed format. With improved response times, it will be possible to reduce the number and bulk of periodic reports. These will be replaced by exception reports triggered by out-of-limit conditions.

Additional on-line files such as Commercial Source and Price History Files will provide planning and control information to managers and operational procurement information to buyers. This feature is curative of deficiencies set forth in 2.3.4.4, 2.3.4.6, 2.3.4.7, 2.3.4.10, 2.3.4.13, 2.3.4.14, 2.3.4.15, 2.3.4.16, and 2.3.4.17.

e. Procurement Interface with Existing Data Systems. APADE II will provide a procurement interface with accounting, disbursing, supply, contract administration and customer data systems. APADE II will interchange data with interfacing systems via machine processible media. This feature will make possible the timely and accurate exchange of procurement and accounting information and is curative of deficiencies set forth in 2.3.4.5, 2.3.4.7, 2.3.4.8, 2.3.4.11, and 2.3.4.12.

f. Real Time Interactive Processing. APADE II will provide the capabilities of updating data files as changes occur, accessing the data files as needed, generating special reports on-line, on-line edit and validation of inputs and telecommunications. This feature is curative of the deficiencies set forth in 2.3.4.3, 2.3.4.4, 2.3.4.5, 2.3.4.9, 2.3.4.10, 2.3.4.11, 2.3.4.13, 2.3.4.14, 2.3.4.15, 2.3.4.16, 2.3.4.17, and 2.3.4.18.

2.4.1.2 New Capabilities. New capabilities include:

a. A standardized, dedicated, responsive data system which is designed and maintained to support Navy procurement operations.

b. Real time procurement planning, monitoring and control.

c. Exchange of machine processible media with other data systems.

d. Fully automated document production and attendant increase in productivity and decrease in PALT.

2.4.1.3 Degree Improvements. Improvements of degree include:

a. Management and operational information tailored to users at all levels.

b. Immediate update of and access to procurement information.

c. More timely and accurate interchange of information with other activities.

d. More comprehensive and reliable data files.

e. Increased standardization of routine functions.

f. Increased ability to process peak loads.

2.4.1.4 Timeliness Improvements. Timeliness improvements include:

a. On-line data files to maximize retrieval and maintenance capabilities.

b. On-line edit, validation, and error notification to expedite corrective action.

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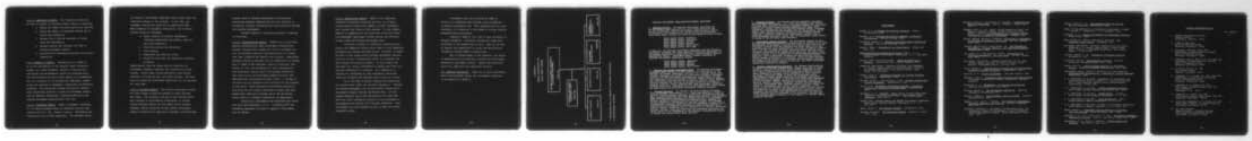

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2.4.1.5 Reduction of Effort. The following actions can be taken to reduce or eliminate present effort or resources:

a. Reduce the number of printed reports now received.

b. Reduce the number of keystrokes through use of Source Data Automation.

c. Release time on NSC ADP resources to handle other NSC requirements.

d. Release external ADP resources now used to process procurement reports.

e. Reallocate word processing equipment and electric typewriters.

2.4.2 Summary of Impacts. Implementation of APADE II, as in the introduction of any computer based information system, will cause equipment, software, organizational, operational and developmental impacts as discussed below. The effectiveness with which these impacts are accommodated will be a function of the professional competence, adaptability and attitude of management, supervisory and operating personnel. The significant changes required do, however, carry significant benefits in terms of procurement support such as improved contracting, increased productivity and reduced procurement administrative lead time.

2.4.2.1 Equipment Impacts. APADE II equipment (Paragraph 4.1) is being purchased under an indefinite delivery type contract with C-3, Inc., Reston, Virginia. Maintenance and training will be provided separately. The equipment should

be located in procurement department space unless there are overriding reasons to the contrary. In any case, all equipment installation plans will be approved by FMSO. When preparing for equipment installation, the following factors should be considered:

a. Space, relative to working, passageways, clearance installation and removal, security, and future additions.
b. Electrical service and protection.
c. Floor loading.
d. Temperature and humidity control.
e. Protection from dust and inadvertent sprinkler discharge.

Communication lines and cables must be installed for procurement component terminals and interface with other systems. Future needs include additional video display terminals, printing devices, and output devices. ADP hardware now supporting procurement operations will be available for other uses.

2.4.2.2 Software Impacts. The software development groups will have access to existing software in which the Navy has rights. The conversion and use of such existing software, because of environmental differences, is limited. Primary software impacts are the common use of standard programs, greater expertise through central development, greater availability of application programs, and associated

reduced costs of software development and maintenance. Centralized software organizations are more effective in attracting, training, developing and using qualified trainees and talented programmers.

Software impacts on interfacing systems is expected to be minimal.

2.4.2.3 Organizational Impacts. APADE II will bring about greater standardization among procurement organizations. Greatest organizational change will occur in document control and document production operations which will become less labor intensive and require less training. Supervisory document production personnel will be responsible for management of APADE II ADP resources, reports of failures, maintenance of logs, and maintenance of local documentation. Both operations (Status Control and Document Production) take place within the Procurement Support Division (NSC/ Administrative and Planning Division (NRPO). A minimum of two CRT's will be operated in this division for the purposes of data entry, report generation and document production. Data entry will be closely controlled to ensure that each system input takes place through one of the two points, Status Control or Document Preparation, as appropriate.

Productivity improvements and associated cost avoidance have been addressed in 2.4.1. In addition NSC Data Processing Department workload in support of procurement will be reduced.

2.4.2.4 Operational Impacts. APADE II will modernize information processing resources and will, as a result, achieve greater balance with respect to other interdependent logistic and financial data systems. In this respect, APADE II is supportive of the objectives of the Navy Financial Management Improvement Program thorugh the provision of more timely and accurate procurement data.

Provision to buyers of information regarding price history and commercial source should result in both expedited processing and reduced purchased prices. Moreover, as buyers are able to more expeditiously process procurement requests they will be able to devote more effort to increasing competitiveness and analyzing markets. In this regard, the data base will contain information on repeat buys which will identify candidates for inventory. As a capability is achieved for interchange of such information, Navy-wide additional economies and improved audit trails will accrue.

As in the case of buyers, managers and supervisors will receive more timely and accurate information. Planning and workload management will be facilitated through use of procurement request tracking and history data. Of even greater potential use is the availability of a data base which can yield information relative to any procurement or procurements from receipt of PR contract completion. Thus, the manager will more probably be able to meet now unknown information needs.

Procurement data can be process by APADE II directly to interfacing data systems, such as UADPS-SP, in machine processible form. This compatibility will lead eventually to a reduction in the number of printed contract documents being distributed.

Similarly, APADE II will lead to more uniformity in contract documents. Contractor satisfaction stems from uniformity in the presentation of data. Much can be done to improve the presentation of caluse and specification information through APADE II capabilities.

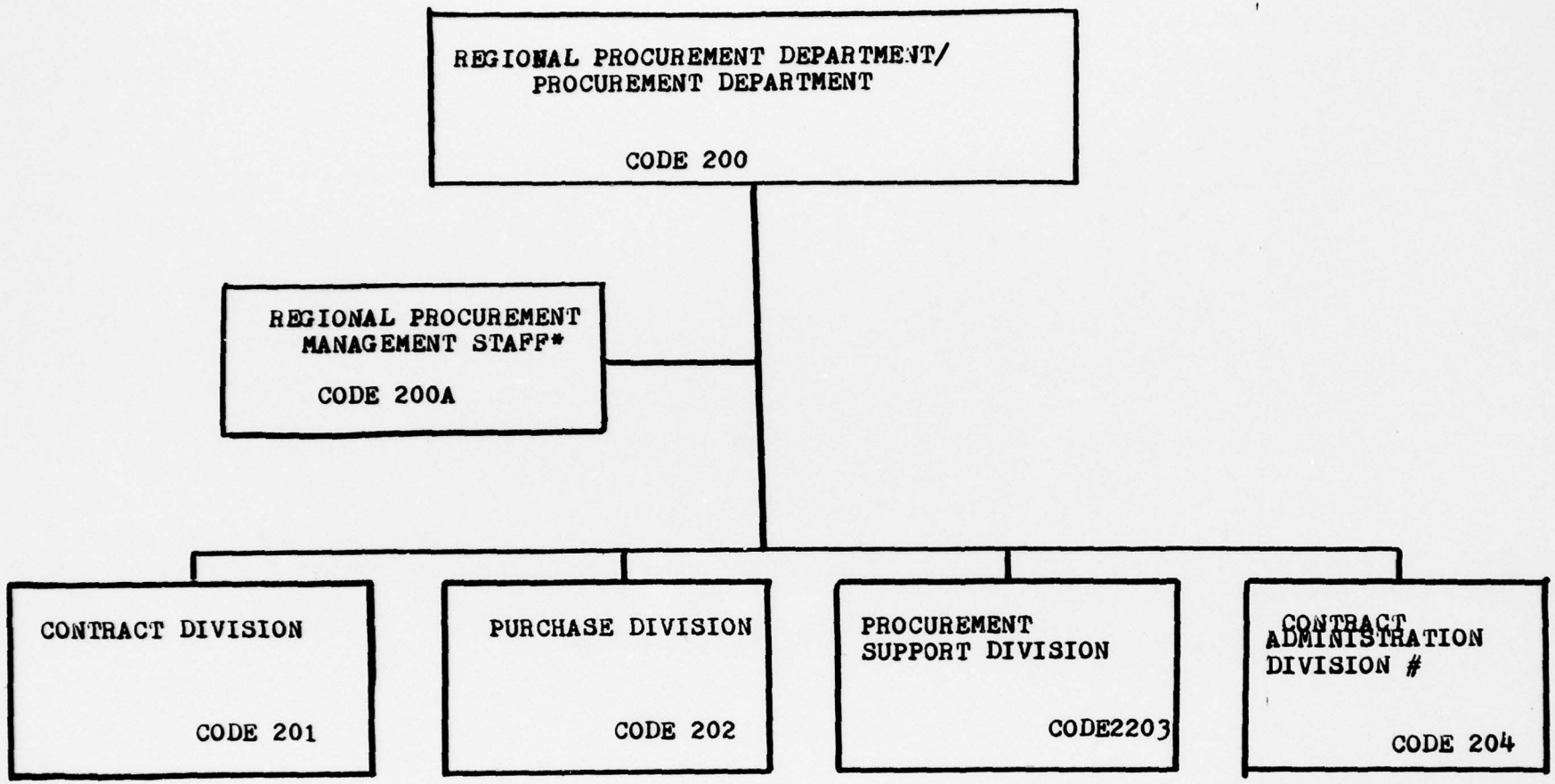
Due to limited number of CRT terminals, two shifts of operations will be required to process the anticipated workload at each APADE location. Adding this additional shift will complicate the supervisory function.

2.5 Expected Limitations. There are no known limitations which would adversely affect the procurement operations to be supported by APADE II.

APPENDIX D

NAVSUP ORGANIZATION FOR

NAVAL SUPPLY CENTERS



* Established only in Regional Procurement Departments.

Establishment optional.

REGIONAL PROCUREMENT DEPARTMENT/PROCUREMENT DEPARTMENT

1. Responsibilities. The Regional Procurement Department and the Procurement Department serve as area buying activities and provide procurement, contract and contract administration support to activities in accordance with current policy and directives. Those Naval Supply Centers with area buying responsibilities include:

Naval Supply Center, Bremerton
Naval Supply Center, Charleston
Naval Supply Center, Norfolk
Naval Supply Center, Oakland
Naval Supply Center, Pearl Harbor
Naval Supply Center, San Diego

In addition, the Regional Procurement Department provides technical assistance, guidance, and other aspects of functional management for procurement operations to naval activities located within a specific geographical region. Those Naval Supply Centers designated as Regional Procurement Departments include:

Naval Supply Center, Charleston
Naval Supply Center, Norfolk
Naval Supply Center, Oakland
Naval Supply Center, Pearl Harbor

2. Regional Procurement Management Staff. The Regional Procurement Management Staff serves in a staff position to the Director of the Regional Procurement Department; provides, on a regional basis, procurement assistance and guidance to activities; provides procurement planning; reviews procurement organizational requirements; reviews and evaluates activity procurement authority levels; provides management appraisals; approves the use of specific contract types; approves activity requests for one-time procurement authority in excess of assigned authority levels; analyzes area wide procurement trends and workload statistics; determines activity performance and effectiveness; and administers and coordinates procurement training programs.

3. Contract Division. The Contract Division primarily processes large procurement requirements, i.e., those requirements in excess of $10,000; reviews purchase requests; coordinates requirements with the Small Business Specialist and Labor Surplus Area Advisor, when assigned; makes determinations concerning the method and type of procurement; reviews contractor qualifications and responsibility; prepares and directs issuance of invitations for bids and requests for proposals as appropiate; analyzes contractor bids and proposals; conducts direct negotiations with prospective contractors; makes determinations on contract awards; determines type of contract to be utilized; prescribes specific contract terms and conditions and determines appropiate contract clauses to be implemented in the contract; develops new sources of supply; and places orders under contract.

4. Purchase Division. The Purchase Division primarily processes small purchase requirements, i.e., those requirements under $10,000 utilizing small purchase procedures; prepares requests for quotations; prepares and issues blanket purchase agreements and makes calls thereunder; processes priced and unpriced purchase orders; processes imprest fund transactions and Standard Form 44 requirements; places orders under existing contracts including federal supply service schedules, indefinite quantity and requirements contracts and on other government sources of supply; and, as authorized, places orders in excess of $10,000 under such contracts.

5. Procurement Support Division. The Procurement Support Division prepares and issues solicitation documents such as invitation for bids and requests for proposals; receives and publicly opens all bids and proposals; abstract bids and proposals and refers them to the Contract Division for award determination; provides information pertaining to bid and proposal offerings; maintains bidder mailing lists; processes bidder and offer applications; maintains, for public examination, copies of bids received and resultant awards/contracts; prepares and issues contractual documents and modifications thereto; effects proper distribution of contracts, orders and modifications; maintains control records on procurements and procurement requests; and prepares statistical reports as required, and other procurement supporting functions as assigned.

6. Contract Administration Division. The Contract Administration Division is an optional organizational element which may be implemented as required by the Naval Supply Center Commanding Officer. The Contract Administration Division administers matters arising under contracts or purchase orders subsequent to their execution and award; negotiates change in scope and contractual add-on requirements; issues change orders and supplemental agreements; obtains written acceptance of contractors to contractual amendments and modifications; amends, modifies and terminates contracts because of default; collects, assembles, analyzes and promulgates contractor performance data; performs contract delivery expediting action in coordination with receipt control component; in conjunction with the Contract and Purchase Divisions, effects contractor discipline in cases of delinquent delivery; processes reconsignments; and performs other administrative actions as required. These functions will be performed by the Contracts, Purchase and/or Procurement Support Division in the absence of a Contract Administration Division.

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